REVISED PIT 9 PROPOSED PLAN

PUBLIC MEETING

Twin Falls, Idaho

November 12, 1992

Reported by:
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TWIN FALLS, IDAHO, THURSDAY

NOVEMBER 12, 1992, 7:00 P.M.

MR. MACDONALD: My name is Don Macdonald. I am the Program Manager for the Buried Waste Program for the DOE, Department of Energy, Idaho Field Office. My responsibilities with DOE are, I am responsible for overseeing the managing of the cleanup activities that go on out at the Radioactive Waste Management Complex, that we will talk to you about some tonight. I will serve as the meeting moderator this evening. And I'd like to thank the folks who came out tonight.

What we want to do tonight is give members of the public information about the proposed plan, the proposed cleanup action at the Idaho National Engineering Laboratory, Pit 9, and answer questions you might have and take formal public comments from anybody that wants to do that.

There is an agenda back over here on the table. If you didn't see one and you want to pick it up, please do so. Also back there, there are a couple of other things to be aware of. There is a green sheet labeled an errata sheet. There are two items in that proposed plan that we wanted to clarify.

One, having to do with soils and soil matrixes for the in-situ vitrification process. And the other having to do with what happens with certain heavy metals in one of the two proposed processes we're going to talk about in detail tonight.

Also back on the back table is a yellow sheet. Anybody who wants to make formal written comments, either tonight, you can do that, leave the sheet here, or it's a preaddressed -- if you fold it over, make comments, fold it over, it's preaddressed and has a bulk mail stamp on it and you can mail it in.

The agenda for tonight, we will do a brief presentation, about 15 to 20 minutes, to outline the proposed plan, go into some detail on alternatives, and particularly the preferred alternative. Following that, we will take questions and answers. And then following that, we will take formal comments.

I want to also make sure people -- I forget this all the time. On that back of that agenda tonight, there is a meeting evaluation sheet, if you want to fill that out, please, and tell us what your thought of the meeting is, its effectiveness, how well you learned anything.

To make clear, the formal public comment period for this proposed plan began October the 22nd and runs through November the 21st. We will take written comments from any members of the public up through the 21st of November. And if it's postmarked the 21st of November, it's acceptable, so to make that clear.

Some other folks are here tonight to help with presentations and answer questions. Jim Wade, who is the Project Manager for this specific project at the RWMC, he is with DOE Idaho. Fred Hughes is the Project Manager of EG&G Idaho, Incorporated.

Also here with us tonight is Dean Nygard from the Idaho Department of Health and Welfare. And Dean, if you have anything to say, or would like to say anything?

MR. NYGARD: As Don said, I am with the Idaho Department of Health and Welfare, Division of Environmental Quality. I am the manager of the federal facility section, which oversees the implementation of the Federal Facility Agreement and Consent Order, which is the reason why we're here tonight. The Federal Facility Agreement and Consent Order set up cleanup schedules, investigation schedules for INEL to comply with. It's an enforceable agreement. We entered into it with DOE, EPA and the State approximately a year ago.

If you would like some more information on what that is and our role, I can discuss that with you at half time break. There is a schedule of activities back there in the back that I believe identifies future investigations. Is it the same one?

MR. SMITH: Yes.

MR. NYGARD: I have worked with these folks over the past year on the Pit 9 project. Our position is, we support this proposed plan. We did then and we still do support the Pit 9 interim action. And if you have any questions throughout the evening, I will be sitting right back here. Thank you.

MR. MACDONALD: Thanks, Dean. So people understand, there is a court reporter here tonight. Her job will be to take a transcript of the entire session tonight. She will record the presentation -- we're set for the presentations for questions, and answers to those questions, and she will take a transcript of any of the formal comments that we get tonight.

Formal comments that we receive, either verbal or written, will be addressed in a Responsiveness Summary, which will be a part of the Record of Decision that selects an alternative to go forward with this cleanup action.

With that, we will try to get started. We are taking a little different approach on presentations. We are going to use these easels and some graphic representations up here.

The Idaho National Engineering Laboratory is located in southeast Idaho. It's an 890 square mile federal facility owned by the Department of Energy and operated by several management operating contractors contracted with DOE.

There are a number of specific facilities located throughout the INEL. The one we are going to be talking about tonight specifically is the Radioactive Waste Management Complex. It's located in the southwestern corner of the INEL. This picture here is an aerial view of the Radioactive Waste Management Complex, or RWMC. It's taken from east looking west.

In 1952 the RWMC was established for disposal of low-level radioactive waste. And that waste was disposed in a series of pits and trenches. Beginning in 1954, the INEL began accepting waste from the Rocky Flats plant in Colorado. And from 1954 through 1970, that waste was also buried at the RWMC, again, in pits and trenches that were dug in the shallow subsurface.

Since 1970, waste from the Rocky Flats plant has been stored waste and stored in the foreground areas of this picture, under this berm here and under these support buildings. That waste not only is bound for the Waste Isolation Pilot Plant in New Mexico, there are still active disposal operations going on at the RWMC for low-level radioactive wastes exclusively at this point. They are disposed of in this area right here. That is just a brief introduction of the RWMC, where is it, what is it.

I will turn it over to Jim Wade at this point to give you some more specifics about Pit 9, what's in it and why we are going to do this.

MR. WADE: Thanks, Don. Thank you guys for coming this evening.

I am going to start out by explaining what Pit 9 is. Again, Don indicated that it's this corner of the RWMC subsurface disposal area, approximately a one-acre site. Overall this is an 88-acre site.

TRU pits and trenches, there is approximately -- well, there's 20 TRU pits and trenches. TRU being -- we live in the acronym world. So if I use an acronym that is not understood or I slip, please let me know. TRU being the definition of transuranic wastes are primarily plutonium and americium in this case. Transuranic is a waste that has an atomic -- or a radioactive element that has an atomic number greater than 92, and a half-life greater than 20 years.

So of the 88 acres at the subsurface disposal area, there's 20 TRU pits and trenches, which constitute roughly 44 acres of area within this area. Pit 9 is in this corner and covers one acre.

Pit 9 was active between 1967 and 1969 to dispose of transuranic and hazardous wastes that came from the Rocky Flats plant, as well as some wastes that were generated here at the INEL. The hazardous constituents, again, the transuranic isotopes are primarily plutonium and americium.

The hazardous constituents, which come from degreasing agents or solvents or oils used in processes at Rocky Flats constitute carbon tetrachloride, trichloroethylene and other volatile organic compounds or VOC's that have been identified as being hazardous waste per the new Resource Conservation and Recovery Act that was instituted in 1986, I believe -- 1980. Sorry.

So those wastes are contained in drums and these drums were placed in the TRU pits and trenches in one of these two forms. They could have either been stacked neatly or just dumped haphazardly in there.

How does Pit 9 specifically look? This is a cross-section of Pit 9. The practice at the time was to dig down approximately 20 feet to the basalt layer or a layer of hard granite type rock that is a -- several -- that provides a foundation for the disposal pit.

An underburden or a soil layer that acted as a management layer was in place in the pit to line the bottom above the basalt and below the pit before waste was actually placed in there.

The waste was then placed in there. And in Pit 9's case it was approximately an eight-foot thickness of waste that was, again, either placed in there using one of these two methods. On top -- now, as soil was placed on top of the waste, it filled in the void spaces that were generated or a result of how the waste was stacked in there, and we refer to those soils as interstitial soils in the proposed plan.

Once the pit was filled up to the eight-foot level, then a six-foot layer of overburden was placed on top of the pit to protect workers from coming in direct contact with the waste.

Now, what does Pit 9 look like from a top view? Again, I mentioned Pit 9 was active between 1967 and 1969. And as Don mentioned, in 1970, the practice of disposing transuranic waste was discontinued. So Pit 9 was one of the last pits that was operated prior to that practice being stopped.

So we have got relatively good shipping records and a good inventory of how the pit was operated and what went in the pit at what times to give us this indication of specifically where we think most of the wastes are located.

The Rocky Flats sludges, which is the majority of the material that contains those degreasing agents and the solvents that I mentioned, are located in -- and as Don would put it -- or on this picture, in the north end of the pit, and then larger other objects, reactor vessel parts and storage racks and what not, are located in the southern end of the pit -- I'm sorry -- northern end of the pit, this being the southern end. So that is what's in Pit 9. That gives you a brief picture of what is Pit 9 and what is in it.

Now, why do we want to clean up and how do we want to go about cleaning up Pit 9? We want to clean it up by doing an interim action, which the proposed plans identifies, that allows us to go in and remediate Pit 9 and remove it as a potential source of risk to human health and environment. Again, the plutonium and americium and the hazardous constituents pose a health risk, and we want to eliminate Pit 9 as a source of those risks.

Also by doing Pit 9, it gives us a step toward determining specifically what kind of wastes are in the pit, how accurate are the shipping records, what kind of information can we get as to what is happening within the pit as to waste migration and container degradation, and give us a good picture as to how then we can attack or investigate the rest of the site and what cleanup may or may not be necessary.

That leads me into how we are going to clean up Pit 9. In the proposed plan, we as the Agencies, being DOE, the State, and EPA, identify five alternatives. We then evaluate those alternatives using the criteria identified in the proposed plan to determine which one we felt was the preferred alternative. And now we are out here receiving public comment on all alternatives.

The first alternative is a No Action alternative. That one is dictated to us by the interim action process that says that you have to evaluate a no action alternative. No action in this case means that because we are doing an interim action that we would take no action at this time, but at the time of final action, which is currently scheduled for 1998 for all TRU pits and trenches, we would determine what action would need to be taken on Pit 9.

In-situ vitrification is another alternative evaluated. There is a really neat model over here that describes it better or shows you a picture of what it looks like. In summary, it takes high voltage electricity using electrodes stuck into the ground, running high electricity through these, and then creates a high temperature and melts the waste in place in the ground and roughly at 1,600 degrees Celsius. The vitrification or the final waste form would be a basalt -- I'm sorry -- an obsidian type, glass form type material.

Ex-Situ Vitrification, the vitrification portion being the same as in-situ. The difference being all the wastes would be excavated from the pit, placed into this vitrification process, again turned into an obsidian type, glass material and then placed into storage.

The preferred alternative is Physical Separation/Chemical Extraction/Stabilization. Fred Hughes is going to go into the specifics of the preferred alternative in a moment, so I will skip over that one and go to alternative five, Complete Removal, Storage, and Off-Site Disposal.

This alternative consists of removing all the waste from within Pit 9, repackaging it in some type of storage container and then placing it in storage until some off-site disposal facility becomes available. Currently there is no off-site disposal facility available.

Those are the five alternatives evaluated.

Alternative four, again, Physical Separation/Chemical Extraction/Stabilization, was deemed to be the preferred alternative by the Agencies based on several things.

The first being that radionuclides can't be treated to remove their hazardous constituents. So the only real process you can do to a radionuclide is some form of stabilization. Alternatives two, three, four all now have a stabilization component.

Alternative four, though, the physical separation/chemical extraction part would reduce the amount of volume that would have to be stabilized. It would be, in effect, decontaminating some of the materials so that they would be -- need to be stabilized and the radionuclide part of the contamination would then go through the stabilization process, so you have a lot less volume that would need to be stabilized.

The other reason why alternative four was selected was because by controlling -- in alternatives two and three, you have to treat all the wastes. And like alternative two specifically -- I can show you the picture -- we don't know how much soil is intermixed possibly with these drums.

So would the in-situ vitrification process work efficiently and effectively with having unknown soils or amounts of soils in here, so you don't know --

we don't have the confidence that we would get a good obsidian type waste form at the end of the process. There is also a concern that with this high level metal content there could be a shorting of the electrodes and the process wouldn't work either.

With the ex-situ vitrification part, by taking all of the waste and dumping it into a process, here again you are not controlling what you are putting in there, you are just taking everything and dumping it into a process, so the efficiency and the effectiveness of the final waste product would be unknown.

Alternative four, by doing the physical separation/chemical extraction part before you do the stabilization part, you control what goes into the stabilization part, so you end up with a much better waste form in the end and a waste form that we have confidence will meet the waste acceptance criteria. That is why alternative four was selected to be the preferred alternative.

I will now turn it over to Fred Hughes who will go through the specific processes proposed to implement alternative four.

MR. HUGHES: Thanks, Jim. One of the most common questions or comments we got from the first round of hearings back in January was, how do you expect us to give you any intelligent comment, how do you expect us to question your alternatives if you haven't told us anything about the technologies you are considering? What I would like to do over the next few minutes is tell you the process we went through to select the companies under the preferred alternative, tell you how the project is structured, and lastly, give you an overview of the proposed processes.

What we did was last year we had some meetings with private industry. And we said, here's Pit 9, here's the waste in it, here's the concentrations, we want you to tell us how you propose to clean up the pit. We didn't put any requirements on them as to, you have to do one of these alternatives. We were looking for the best that private industry could offer.

Before we sent out the Request for Proposal we had roughly 18 teams that said they were interested in bidding on the proposal. We sent out the Request for Proposal. We got three teams that responded.

When we got the responses in, we formed a source evaluation board. And that board consisted of chemical experts, process experts, production experts, radiological experts. And they sat and reviewed the proposals. And they looked at the proposals as to whether they were technically feasible, whether they understood the complexity of the job, whether what they had proposed for the project made sense.

The board came back and said of the three teams, two are the best and two of them we consider to be equal. The third team was considered to be technically infeasible to accomplish the job we were asking.

So we had two teams, Waste Management Environmental Services and Lockheed. The board said they offered the best technology in the world today to clean up a site like Pit 9, they understand the problem. However, we want to see some of their integrated processes tested before we let them go out to the pit.

So what we have done is we have structured the project assuming that the preferred alternative is the selected alternative. We structured the project into three phases. And we are interested in doing the project in a cost-effective manner. We don't want to waste the taxpayers' money.

We are also interested in using proven technology. This is not a research and development job. We want to do the job safely. We want to protect you, the public, we want to protect the workers at the site and on the project, and we want to make sure the environment is protected.

So we have three phases for the project.

The first phase is called a Proof-of-Process test. In this phase both companies at their own locations, not at the site, will test critical aspects of their processes, those aspects that we think are necessary for them to succeed.

They have to demonstrate the processes work. They have to meet the criteria. They are using their corporate funds to do this. They will be reimbursed up to eight million dollars if they pass all the criteria. So it's a fixed price, lump sum, pay for performance type contract.

Also during this test we are using substitute materials for the radioactive constituents, those that mimic the plutonium and the americium. We are not interested in contaminating their pilot scale equipment at this point.

At the end of this test we will evaluate both teams. We will make a selection based on their technical performance, how they performed on the schedule, how they perform if problems come up and how they work around those problems.

One team, hopefully, will be evaluated as the best. And they will be -- it will be negotiated to go on to the Limited Production Test. During this phase they will erect a containment building around the entire pit. They will install full size equipment. And they will go through another test sequence.

They will use substitute materials initially to prove that their full size equipment works. And then they will uncover a very restricted part of the pit and take some actual waste out of Pit 9 and process that as their last test demonstration. They must pass this test in order to go on to the last phase. The last phase is essentially cleanup of the entire pit.

Now, what did both teams propose? I will start with Lockheed. What you will see in both cases is that they have their processes broken into three main stages: physical separation, treatment and stabilization. The other thing you will notice is that in both teams' cases, they are constantly testing throughout the process for clean material, the material that meets the return to pit criteria in order to try and minimize the amount of material that has to end up in storage at the end of their processes.

In Lockheed's case, what they are going to do is at the dig face -- and what I mean by dig face is as they uncover the waste at the point where they come across a barrel or a piece of pipe or some sludge, that is the dig face.

At the dig face they will separate the waste into waste streams: large items, the reactor vessels that Jim mentioned, non-soil, sludges, glass, metal and contaminated soil. The large items, if it's determined that it has to be decontaminated, will be decontaminated inside the pit and left there.

Non-soil will be sent directly to a thermal treatment process. It's a Plasma Arc Melter, operates at 3,000 degrees Fahrenheit. It takes the feed material that is sent to it, transforms it into a glass-like material, obsidian, as Jim mentioned, iron enriched basalt.

The contaminated soil, what they do is send it into their chemical extraction and treatment process. Two things happen here. First of all, in the solvent extraction phase they strip off the organics and send those contaminants to the melter for stabilization.

The other thing that happens is the soil is separated by size; less than ten microns, greater than ten microns, using a gravity based physical separation process. The reason they separate it by size is that they found that the smaller soil is much easier to send through their nitric acid leach in order to extract the transuranic material.

What they do is they separate the soil by size, the less than ten micron soil is sent to a nitric acid leach, which takes the TRU material out of the soil. They are testing in both phases for clean material and the concentrated transuranic material is sent to the thermal melter. The larger soil is also sent to the melter.

This is the critical part of their process. This is the one part that we're asking them to test in their Proof-of-Process test. They must demonstrate the melter works, that the feed system works, that the gas scrubber works. They have to prove that the emissions of the gas scrubber will meet the state of Idaho air emission requirements. They have to demonstrate that the material that will be placed into storage on an interim basis meets the waste acceptance criteria.

In Waste Management's case, they have three phases, like Lockheed. At the dig face they also separate the waste into waste forms: large items; greater than two inches, and less than two inches, which is primarily your soils and your sludges.

The reason they separate on a two-inch basis is because their chemical process is not designed to handle material greater than two inches. So for the large items and the greater than two-inch material, they will reduce it in size, shred it and decontaminate it in place.

So less than two-inch material, your soils and your sludges, they send it into their chemical extraction process. This is the critical part of their process. This is what we are asking them to test as an integrated process for the Proof-of-Process test.

There are several things that happen here. In the chemical extraction stage what they are trying to do is take your transuranic material, your nitrates that come out of the sludges, and solubilize that. In other words, get them into a liquid phase.

They do that, that concentrates your hazardous material into a liquid phase. The remaining solids are tested to make sure they can be returned to the pit. The concentrated liquids are sent to an evaporation process, where any material that readily evaporates at less than 110 degrees is transformed into a gas, sent through a gas scrubber system, monitored, tested before it's released to the atmosphere.

The concentrate that comes out of the evaporator, which contains your heavy metals, your transuranic material, is sent through their stabilization phase. And depending on the type of concentrate they get, it will either go directly to storage or go through a drying or a chemical binding stage where they add chemicals to bind the hazardous material up into a stable matrix.

During this first phase of the project they have to demonstrate that this system works as an integrated process. They have to demonstrate that the end product going into storage meets the waste acceptance criteria. In both cases the teams have to demonstrate that a radiation monitor device at the dig face can detect plutonium at three feet.

MR. NOKKENTVED: What is the output at the decontamination phase?

MR. HUGHES: This stage here?

MR. NOKKENTVED: Yes.

MR. HUGHES: Basically what it is, for example, on a reactor vessel --

MR. NOKKENTVED: Well, that decontaminant, are they going to use some kind of decontamination liquid?

MR. HUGHES: Right.

MR. NOKKENTVED: What happens to that?

MR. HUGHES: It gets fed back into the rest of their process.

MR. NOKKENTVED: Because it doesn't have any arrows coming out.

MR. HUGHES: That's right. And this is a simplified drawing. We didn't want to clutter it up with arrows going all over the place.

Basically, in both processes they are required to minimize as much of the waste as possible. In fact, in this case, it's a net user of water.

In summary, we are going to do this using proven technology. We are not doing research and development. We want to do it safely, so we structured the project to ensure that all the technologies are proven before they go to the next phase. And we are going to do it in a cost-effective manner.

If you have any questions during the next part, either myself or my technical advisor, Dr. Kolts, will try and answer your question.

DR. RICKARDS: I am Dr. Rickards. What is the nanocurie per gram constituency of the end products of the two stabilization techniques?

DR. KOLTS: Where? What is considered clean or what is considered dirty?

DR. RICKARDS: Yeah, the TRU storage.

DR. KOLTS: It has to be less than ten nanocuries per gram.

DR. RICKARDS: No, the TRU storage that's there.

DR. KOLTS: Oh, this? It has to be greater than ten nanocuries per gram.

DR. RICKARDS: You don't have anything more specific? Could it be a hundred nanocuries per gram?

DR. KOLTS: Certainly, and we hope that it is.

DR. RICKARDS: You are sure that it is?

DR. KOLTS: We hope that it is.

DR. RICKARDS: You hope that it is?

DR. KOLTS: We hope that it's concentrated down to where it's quite a bit above that, yes.

DR. RICKARDS: I asked if it could be exactly one hundred nanocuries per gram?

DR. KOLTS: It's the luck of the draw. I mean, we are doing a concentration step. If we happen to be running a lot of dirty stuff in front and we concentrate it, it's going to be real dirty when it comes out the back.

DR. RICKARDS: You bet. But, now, a hundred nanocuries per gram will qualify for reburial of this low-level waste. I am curious --

DR. KOLTS: If it's about ten nanocuries per gram it goes here.

MR. HUGHES: In order for it to be buried back in Pit 9 it has to be less than ten nanocuries per gram.

DR. RICKARDS: Now, I understand what you're saying, but you're not answering my question -- well, you actually have answered it, but I'm not sure you realize you have.

The TRU storage part, the part that you

claim you're going to store and not rebury, if what this gentleman said is that it can meet -- it possibly could be a hundred nanocuries per gram, that legally would be stabilized in a form which is officially legally nationally low-level waste and legally would be reburied at RWMC as low-level waste.

MR. HUGHES: What you say is true in part, but we are not going to rebury that waste, it will go into TRU storage.

DR. RICKARDS: I understand this interim action. But at that point, if the Department of Energy legally decided it would be isolated waste, totally under the Department of Energy control, and the official rules everywhere in the country are a hundred nanocuries per gram, that this material can be legally reburied as low-level waste with an unlimited quantity. So what you are saying is that you are not at this very action going to bury that, but it legally will be stabilized to a level which is legally reburiable.

MR. MACDONALD: No, that is not true.

DR. RICKARDS: Okay, but that is what you said at this point. It's on the record.

MR. MACDONALD: That material will be a varying --

DR. KOLTS: You are trying to put words in my mouth. Now, listen very carefully to my words and don't interrupt, please.

DR. RICKARDS: We have a transcript.

DR. KOLTS: Right. We have two materials coming out of here. To go here, it has to be less than ten nanocuries per gram. If it's above ten nanocuries per gram it will go to TRU storage. It will not be segregated as it being between ten and a hundred. It will be going to TRU storage.

DR. RICKARDS: At what nanocuries per gram? You said -- I am not putting words in your mouth -- you said it could be a hundred nanocuries per gram.

DR. KOLTS: It could be eleven nanocuries per gram.

DR. RICKARDS: Exactly.

DR. KOLTS: And if it's eleven nanocuries per gram, it goes here.

MR. MACDONALD: What I am saying is anything over ten nanocuries per gram is not buried at the RWMC.

DR. RICKARDS: Exactly. That is my point. Legally, you understand, you're not trying to deny that the standard for legally burying is a hundred nanocuries per gram, correct?

MR. MACDONALD: One hundred nanocuries per gram, anything above one hundred nanocuries per gram is classified as transuranic waste. Anything less than a hundred nanocuries per gram is classified as low-level waste.

DR. RICKARDS: So the two procedures that you have chosen --

MR. MACDONALD: But you asked the question about reburial at the RWMC, and we do not bury material at the RWMC less than --

DR. RICKARDS: I understand that. I'm not -- you're not listening to me.

DR. KOLTS: Are you trying to suggest that we do bury it back in the RWMC?

DR. RICKARDS: What I am saying, and what you've agreed to, is that it could be eleven nanocuries per gram of soil -- or per gram of material.

DR. KOLTS: And I am asking, should I take that instead of putting it into TRU storage, are you suggesting that we put it back into the ground?

DR. RICKARDS: I have --

DR. KOLTS: Yes or no would be adequate.

DR. RICKARDS: No. I didn't say it. I didn't say it and I didn't suggest it. What I am saying is, if it concentrated at 200 grams per slag material, 200 nanocuries per gram, it could never be legally reburied. What you are saying is that you don't know.

MR. MACDONALD: That's not true either.

DR. RICKARDS: Explain why is it not true.

MR. MACDONALD: There is no -- that one hundred nanocurie per gram is a definition of what constitutes transuranic waste and what constitutes low-level waste, partially a differentiation.

DR. RICKARDS: I agree entirely.

MR. MACDONALD: That is all that means.

DR. RICKARDS: And I am asking you, you know, we have gone around and around at the last Pit 9 meeting about what can be legally buried. And all of a sudden you haven't answered any of my questions, but you come up with a stabilization procedure.

MR. MACDONALD: TRU waste could conceivably be buried.

DR. RICKARDS: Somewhere other than WIPP, right? Because this legally could never go to the WIPP facility, correct?

MR. MACDONALD: No, WIPP will only accept TRU waste for burial.

DR. RICKARDS: WIPP will only accept waste generated after 1970. This is pre-1970.

MR. MACDONALD: And only transuranic waste.

DR. RICKARDS: That's correct. But this waste, no matter what it is, is before 1970 waste.

MR. MACDONALD: Correct.

DR. RICKARDS: And it can legally never be sent to WIPP -- if WIPP were to ever open, it could never legally be sent to WIPP; is that correct?

MR. WADE: At the current time; that's correct.

MR. HUGHES: Unless you go through and change the EIS and go through the whole process.

DR. RICKARDS: Right. As you said it, the other pit being, it's legally a preamble of the WIPP thing, can not go to WIPP?

MR. WADE: At the present time, that's correct.

DR. RICKARDS: If it is a hundred nanocuries per gram of stabilized material or less, that is --

MR. MACDONALD: Less than one hundred nanocuries per gram.

DR. RICKARDS: That's right. I understand at the end of this interim decision you are not legally agreeing to rebury. What I am asking is, you know, these people presented these techniques, you are about to choose one of them. If you don't know how many nanocuries per gram it is -- if it's over 200 it won't be -- ever legally buried at RWMC. If it's under a hundred, or a hundred and under, then you are the gingerbread man on the fox's tail.

DR. KOLTS: I don't understand. What do you mean by that cliche?

DR. RICKARDS: What I mean is, if they have stabilized it at the end of this interim decision at a hundred nanocuries per gram and it can legally be reburied as low-level waste --

MR. HUGHES: It will go to TRU storage and it will stay in TRU storage for a minimum of 15 years until an ultimate disposal facility is decided on. It is not going to be buried in the ground. It's going to go to TRU storage, in either case.

MR. NYGARD: Actually, it would --

DR. RICKARDS: You're answering a question I didn't ask.

MR. NYGARD: -- be in the final Record of Decision. That will decide the final disposition of material as placed into the storage.

DR. RICKARDS: Dean, this is important for you to understand, since you are representing the State on this. If the stabilization form comes out at a hundred nanocuries per gram, which they said it could, it could come out at eleven, it legally can be reburied on RWMC. If it's concentrated at 200 nanocuries per gram, it must be buried as TRU waste.

MR. MACDONALD: No, no. You are not --

MR. NYGARD: The Record of Decision would state and will state, because we have put it into the proposed plan, what the return to the pit criteria is. As we are presenting it this evening, it is ten nanocuries per gram; ten -- not a hundred -- ten.

DR. RICKARDS: I am not talking about what at the end of this interim decision will be returned to the pit.

MR. MACDONALD: No, No. What is important -- you are missing the point. What we have here is a waste that no matter what comes out the end of either one of these processes is a regulated waste. It's a waste that was, in essence, generated, exhumed, treated, stabilized, and is now stored, under an action undertaken under CERCLA.

The determination of what ultimately happens to that will be made by the three Agencies involved: the EPA, the state of Idaho, and Department of Energy. It could -- you're right, it could -- those Agencies could determine that it could be buried somewhere at the INEL or any other location, irrespective of whether it's less than ten nanocuries, between ten and a hundred, or greater than a hundred. But the DOE does not unilaterally get to make that decision.

DR. RICKARDS: Well, the main point is that in the techniques that are used and presented to you, if it comes out at 99 nanocuries, is that what you're saying? That is what you said could happen. Or are you saying you don't know?

MR. NYGARD: What could happen? What could happen at 99 nanocuries?

DR. RICKARDS: The end product of stabilization, not what is returned to the pit, but what's designated on both arrows going to TRU storage, if they stabilize it -- they literally -- let's take that thermal arc technique.

They burn off the organic compounds. They burn off at 3,000 degrees their gloves that were there. At that point you have concentrated radionuclides which are highly concentrated and maybe a thousand nanocuries per gram of that material. When you put it in a slag form, when you stabilize it, that is -- represents, then, how much slag you put in, represents the grams. So you have either a hundred nanocuries per gram or you have 300 nanocuries per gram. If you stabilize it at 300 nanocuries per gram, it legally will be TRU waste.

If they stabilize it as they mentioned at eleven nanocuries per gram, it will legally be low-level waste. That is extremely important to exactly define what that is going to be. They can manipulate that by how much slag they add to the stabilization technique. What they have said here is simply exactly what I have been claiming, that it will be legally a hundred nanocuries or less.

You're clinging to the ROD decision, which is fine and I will argue that with you later. But at the moment, the definition, the legal definition of low-level waste, which is not reburied in Pit 9, but taken over to the other part of the RWMC and buried, legally in an unchecked quantity, it totally depends. Now, are YOU going to backtrack from that statement?

MR. MACDONALD: What is going to happen to that material, it does not matter what the transuranic content is. If it's greater than ten, it will be -- anything greater than ten will be stabilized in that matrix.

DR. RICKARDS: I understand, but in 15 years it's going to --

MR. MACDONALD: It could be greater than a hundred.

DR. RICKARDS: -- in 15 years it's going to be exactly the same as it is at the end of their procedure. And I'm asking you --

MR. MACDONALD: But the burial -- the definitions of transuranic waste ultimately do not have a bearing without the concurrence of the state of Idaho and the Environmental Protection Agency as to where it goes, off-site, reburial.

DR. RICKARDS: If they can legally -- the DOE does things that are illegal. If they can legally do something, take a guess of what they will do.

MR. MACDONALD: No, the DOE doesn't do things that are illegal.

DR. RICKARDS: Well, the federal courts found that they were hiding documents from the public, and that's why they want us to believe this.

MR. MACDONALD: Next question.

DR. RICKARDS: So you are letting the record stand that it could be eleven nanocuries per gram?

MR. MACDONALD: Sure, absolutely.

DR. RICKARDS: Do you know exactly what it is?

DR. KOLTS: No. There's absolutely no --

DR. RICKARDS: Why don't you?

DR. KOLTS: How would you know?

MR. HUGHES: It hasn't been tested yet.

DR. KOLTS: Let's say that we dig up two drums of material that is 200 grams of plutonium per drum, it's really hot. And it's processed over here into one gallon. That is what it's going to be. Now, we take another scoop three feet over and we dig up two drums that is chuck full of carbon tetrachloride but it's got no plutonium in it, except maybe one gram.

And now we process it through the whole system. We have to process it because it's hazardous. Can you see the difference between the two? How do you know --

DR. RICKARDS: Yes, I can.

DR. KOLTS: -- one scoop from the other scoop? We are not Gods here.

DR. RICKARDS: Let me take your example and explain where it comes into play. When you take the burial of the small amount of radionuclides and you put it into the thermal treatment -- and since this is mostly rags, and that burns off, you have left at the bottom of the thermal treatment almost pure radionuclides.

DR. KOLTS: No, you don't. You are completely wrong.

DR. RICKARDS: Do you have any of the rags left?

DR. KOLTS: No.

DR. RICKARDS: You burn off the rags, correct?

DR. KOLTS: Right. In the thermal treatment we're going to make iron enriched basalt. Have you read those reports out at the INEL?

DR. RICKARDS: I have read everything that you did.

DR. KOLTS: I'd be happy to get you the report on the iron enriched basalt. What they do is they will take the non-soil, your barrel of rags, and they will add just enough soil to make iron enriched basalt. You don't have a stabilized waste form if you have burned it to a fine powder. We are going to add just enough soil to it, not to dilute it, but enough soil to it to make it into iron enriched basalt, the stabilized waste form. They have got to do that.

We are never going to turn this 55 gallon drum of rags into a gram of nothing.

MR. NOKKENTVED: The basalt is like a ceramic?

DR. KOLTS: It looks very much like obsidian glass. In fact, obsidian glass from around here is iron enriched basalt.

DR. RICKARDS: Now, since the standards are nanocuries per gram, when you are adding this basalt, how can you claim that is not dilution. You are adding grammage. If you take something which is a hundred nanocuries and you add one gram of material to it, you have a hundred nanocuries per gram. If you add ten, all of a sudden you have ten nanocuries per gram. These are standards that are going to come into play in 15 years. Let's not be naive about this.

DR. KOLTS: I know what you are trying to get at. You are trying -- I think -- and I am not trying to come back, but I think what you are trying to say is that this is all a big ruse, and what we are going to do is dig up the pit, we are going to mix it all together, and we are going to dilute it down to nothing. And in 15 years from now, hopefully when you've moved away, we are going to put it back in the ground. Is that what you are trying to tell me? Yes or no would be adequate. I mean, I can be as nasty as you are.

DR. RICKARDS: No, that is not what I am trying to say.

DR. KOLTS: What we are trying to do, the criteria these companies will be judged against, is one, they have to reduce the volume of the contaminated material by 90 percent to pass. So anything that is over ten nanocuries per gram when it comes out of here for them to go on with the test, they have to reduce that volume by 90 percent. So that can give you a concentration factor right there.

They have also got to destroy the hazardous and stable -- and stabilize the hazardous chemicals. We have got to add just enough soil here, not to dilute it, but to give us a stable waste form. Just like over here, if we have to add a sulfur polymer, would you consider that dilution or stabilization?

DR. RICKARDS: Well, it depends on how much you add, I am afraid.

DR. KOLTS: We are adding by volume five percent, ten percent. That is a lot of difference between adding two million cubic feet to stabilize.

MR. MACDONALD: What is the question?

DR. RICKARDS: I believe you were asking the questions.

DR. KOLTS: Pardon me?

DR. RICKARDS: I have another set of questions. But you were asking me questions. How much in the ten nanocuries per gram of material that you are going to be returning to the soil -- since you're starting with 40 pounds of plutonium here and, what, a pound and a half of americium, how much are you going to be returning in all of these?

DR. KOLTS: In our estimation?

DR. RICKARDS: Sure.

DR. KOLTS: I would guess from the calculations that I have done that the maximum would be around a pound or two. It could be much, much --

DR. RICKARDS: Of americium or plutonium or what?

DR. KOLTS: Based on plutonium-239, which is the major component.

DR. RICKARDS: Before you were saying ten percent reburial and, let's see, one pound out of 40 -- Jim, you are good at math, what is the percentage?

MR. WADE: No, I'm just listening to this.

DR. RICKARDS: What is the percentage? What would one pound out of 40 be?

DR. KOLTS: You have to go -- you have to go to ten nanocuries per gram.

DR. RICKARDS: I am trying to get an idea of total quantity. Let me just say it like this: Originally at the December meeting you all represented the concept of removing 90 percent and returning ten percent.

DR. KOLTS: Right.

DR. RICKARDS: Am I misstating?

DR. KOLTS: No.

MR. WADE: Let me put in a clarification. In December we said 90 percent was our goal, which would imply ten percent return. Ten percent of 44 would be 4.4.

MR. NITSCHKE: Be careful because you're mixing up activity and volume.

MR. WADE: Now, what John is talking about is based on other factors thrown in there. He believes, based on what he knows, that approximately one pound would be.

So what was said last December was said not knowing what the processes could do with a goal of a 90 percent volume reduction. That is where that ten percent number came from. And that is the only place that ten percent came from. Now, what John is saying is that based on the technologies and what we know now, he believes it to be a pound be returned to the pit.

DR. RICKARDS: Has anybody worked on a percentage on it?

DR. KOLTS: I have worked it from one end to the other. And one to two pounds appears to be about the maximum, based on the processes, how they are going to segregate at the pit, how they are going to try to minimize mixing dirty stuff with clean stuff. I came out with a pound or two maximum. And we hope that it's much, much, much less than that.

In fact, they are getting graded on how much less than that they can come up with. During the POP test they have to show how well they have done, and the one that does the best gets extra points to go on with the test.

DR. RICKARDS: Let's just say they could only produce ten percent, which is the figure you mentioned in the last meeting.

DR. KOLTS: That reduces the volume by 90 percent.

DR. RICKARDS: The figure I am going to work with is, let's say they only return ten percent to the pit. Would that be acceptable to you?

DR. KOLTS: It has to be less than ten nanocuries per gram.

DR. RICKARDS: You bet. But the total volume to meet with the ten nanocurie per gram are less than standard.

DR. KOLTS: Right.

DR. RICKARDS: Ten percent would be acceptable?

DR. KOLTS: Well, that's the worst, yes.

DR. RICKARDS: Now, if you will, one of the questions I asked you specifically is since you have 800 pounds of plutonium to begin with --

DR. KOLTS: No, you have 40 pounds.

DR. RICKARDS: In the total RWMC, pre 1970, you have 800 pounds of plutonium to begin with, if this technique were used --

MR. MACDONALD: We are not talking about the entire RWMC.

DR. RICKARDS: Hold on a second. Okay? This is a prototype, and if it succeeds on Pit 9, it will be used for everything, or it could be.

MR. MACDONALD: No, no.

DR. RICKARDS: Oh, they're just going to forget it?

MR. WADE: To do the rest of the Radioactive Waste Management Complex, we would have to come out and do more public meetings and come up with new proposed plans. To say that this is going to be the key --

DR. RICKARDS: I didn't say you wouldn't do it without meetings. All I am saying is that -- just follow this sentence through for a minute. If you have 800 pounds in the whole RWMC and you rebury ten percent, that is 80 pounds. Now, Pit 9 has 40 pounds in it. And your figures --

MR. MACDONALD: No, Peter, that is not what we are talking about.

DR. RICKARDS: It doesn't have 40 pounds in it?

MR. MACDONALD: We are not talking about reburying ten percent of the plutonium.

DR. RICKARDS: Well, on the transcript a moment ago, I said if they reburied ten percent, you would find it acceptable.

DR. KOLTS: No, that is not what I said. I said you have to reduce the volume of material by 90 percent. If you have a hundred pounds of contaminated dirt that is somewhere, somewhere above ten nanocuries per gram, you have to reduce that volume down to less than ten pounds and the curie content of that ten pounds has to be less than ten nanocuries per gram. Did you follow that one?

DR. RICKARDS: Yes, and you did say you were going to give bonus points for the less the return, the better?

DR. KOLTS: Right.

DR. RICKARDS: I said, if they had to return ten percent with radionuclides to the pit, would you find that acceptable?

DR. KOLTS: No.

DR. RICKARDS: On the record you said you would find it acceptable.

DR. KOLTS: No, I said volume. I didn't say radionuclides -- I didn't say americium or plutonium content. I said volume of material. Volume is the soil. Let me give you an example.

If this hundred pounds has a thousand nanocuries per gram and we reduce it by 90 percent, you have now concentrated it down to ten pounds, but it's not less than ten nanocuries per gram by your definition. They have got to get it down by a minimum of 90 percent, volume of material - dirt, tin cans, 55 gallon drums - and they have got to get it below ten nanocuries per gram. They have got to meet both.

DR. RICKARDS: At the December meeting, you said that you were aiming -- and Jim just agreed with this -- for a return of ten percent of the volume of radionuclides.

MR. WADE: No, I said, again, a volume reduction -- and the ten -- you were trying to figure out where we came up with the 4.4 pounds. And what my statement was is that the 90 percent volume reduction was probably where the ten percent number came from.

Again, the key here is that we are talking waste contaminated with greater than ten nanocuries volume reduction, not volume reduction of we take 90 percent of the plutonium out there out of it or we take a hundred percent of the plutonium out. It is based on cleaning it up, the less than ten, while getting a 90 percent volume reductions.

DR. RICKARDS: So what I am asking you is to quantify at the ten nanocuries per gram of soil level, how much is going to be returned. Now, you either have that figure or you have no idea. Before you were working with ten percent.

MR. MACDONALD: It was stated that estimates are between one and two pounds would be the most expected to go back to the pit.

DR. KOLTS: That is based on my estimations of this process.

MR. NITSCHKE: It is somewhat confirmed if we took the entire volume of material we plan to return to the pit based on that volume reduction and every bit of it was ten nanocuries per gram it would be two pounds.

DR. RICKARDS: You're saying everything in the pit, if it were ten nanocuries it would be two pounds?

MR. NITSCHKE: Right, after it's gone through this volume reduction. That is in the Residual Risk Assessment Report of public record, those calculations.

DR. RICKARDS: What page is it on?

MR. NITSCHKE: Page --

MR. MACDONALD: Got any other questions?

DR. LENKNER: I had one. It will be simple by comparison. This went by too fast for me. And I was wondering, what became of the lead sheets? And the other thing is, what about the carbon tetrachloride kind of thing? Over here we were burning it off or something like that to get the radioactive material within. I mean --

DR. KOLTS: Let's take the carbon tet first. And it's different in each process. In this process the carbon tet that is in the soils and the sludges will be decomposed in the thermal melter.

DR. LENKNER: The --

DR. KOLTS: Let me get to that. The part -- the carbon tet that is in the contaminated soil will be extracted in triethylamine and will also be sent to the melter. Okay, when it's in the melter, carbon tetrachloride will be decomposed to carbon dioxide and hydrochloric acid. The hydrochloric acid, when it comes out of the melter, is reacted with sodium hydroxide and it forms table salt.

DR. LENKNER: I remember that much.

DR. KOLTS: The carbon tet ends up as carbon dioxide and table salt. Trichloroethylene ends up as carbon dioxide, table salt, and water from the hydrogens that's on it. Okay. The lead sheeting that is in there. If the lead sheeting is contaminated -- the lead sheeting in there is very low-level material. It's less than ten nanocuries per gram, unless there has been a Rocky Flats sludge drum that has broken open on top of it. One of two things will happen. One, it will be decontaminated by washing it with the solvents. Or if that is not adequate, it will be broken up and run through the entire process.

DR. LENKNER: So it wasn't going back as large items, just back in the dirt?

DR. KOLTS: The only time it would be left in there is if when they did the Rad check on it and the hazardous chemical check on it, it will never go back -- well, it's lead -- it's never going to go back in the pit.

DR. LENKNER: That was my point. I regard lead as toxic by itself.

DR. KOLTS: And it is. It would just end up -- it might be taken out in drums separately. I mean, you wouldn't run it through the melter if you didn't have to.

DR. LENKNER: But it wouldn't be thrown in with the --

DR. KOLTS: No, no, it's a hazardous material.

The same thing happens over here only the carbon tet goes through the same exact thing, except it does it over a catalyst, not in the melter.

DR. LENKNER: Same end products?

DR. KOLTS: Same end products.

MR. MACDONALD: Is there another question back there? Any more questions?

DR. RICKARDS: Yeah, I do have a question. In the technical briefing I had with Jim Wade and others, I showed them a graph to which the -- which questioned the standard acceptance in HEPA filters and the point three micron particles were the hardest to filter. I have a copy of the graph here. Jim remembers, I talked to him about it today. And they at the time stated they didn't know the sizes of the different plutonium and americium of the particles.

And what I was questioning was, since smaller particles get through more efficiently or penetrate the filter at a higher level, if all of the particles are smaller, that is going to change all the calculations for digging this up and how much comes through the HEPA filters. And they actually promised to do upstream and downstream counts. With electron microscopes to document for these particle sizes, the HEPA filters were sufficient.

This is important compared to the other alternatives that were suggested where you solidify it first before you remove it, which would have practically zero percent airborne activity. So, Jim, have you done these HEPA studies, since you're going to go full speed ahead with what we have here?

MR. WADE: No, we haven't done them yet. As Fred mentioned, as part of the Proof-of-Process test for these particular processes, the off-gas system, the gas scrubbing system will be tested. And the test -- I don't remember anybody ever committing to the use of an electron microscope to do these tests.

I know that we said we would ensure that if HEPA filters were to be used, that the process would have to be proven to be able to be accomplished in a safe manner to be both protective of the workers and the public.

That is why we are doing the Proof-of-Process, as Fred mentioned, to ensure that worker safety and public safety is met. The emissions from the gas scrubbing system have to comply with the state of Idaho Air Emission Standards.

DR. RICKARDS: That is the important thing there. As you know, I tape recorded the phone conversation, so if we need to document it, we sure can. Literally, we discussed --

MR. MACDONALD: He didn't mentioned electron microscopes.

MR. WADE: There were three of us that were there that are here tonight and none of us remember electron microscopes. I do remember committing that we would test the process to ensure that whatever they proposed, if HEPA filters were used, that we would ensure that it is done safely. And that is what we are doing with this Proof-of-Process test.

If that means that we have to use electron microscopes somewhere -- and, John, jump in here because I'm not sure the details of how they're going to test it -- but they have to prove to us that it can be done safely and the off-gas system meets the standards that are established by the state of Idaho.

MR. MACDONALD: Prove it to the State and prove it to the EPA.

MR. WADE: And prove it to us, the DOE.

DR. RICKARDS: Now, what was mentioned on the phone last, it's what's presently is accepted by the State and the EPA is contradicted by that graph, which is the Department of Energy graph.

So in response to it, that contradiction, you said that you would verify that the particles weren't smaller than three microns, and that if they were, you would test HEPA filters on them. Now, what you are saying here is what I accused you of really meaning on the phone, which is, you are simply going to use the old standard 99.97 and ignore the different sizes and ignore the smaller particles get through. So is that what you're saying?

MR. WADE: No, we are not saying -- we are not accepting any standard. What we said is show us what this system will do. It is not a matter of give us a report that assumes X number of efficiency. The Proof-of-Process test indicates that they have to prove this process will perform satisfactorily.

That means that, as Fred said, they are going to use a surrogate type material that reacts or acts similar to the way plutonium would act and actually run it throughout this system. It is not a paper test. It's not a computer model. It is a real test to see what happens when this stuff goes through this system.

DR. RICKARDS: Right. But as you are going full speed ahead with digging this up and juggling it without having it stabilized first, you are assuming that the HEPA filters are going to work?

MR. WADE: No, no. Again, that is what the Proof-of-Process test is. We are not going to dig up any dirt until we know it works. There's no assumptions involved. They have to pass the Proof-of-Process test, indicate that this system works, before we ever go and lift a shovelful of dirt out of Pit 9.

DR. RICKARDS: When I've asked a basic question on the HEPA filter, and you promised to do the test on the --

MR. MACDONALD: What is the question?

DR. RICKARDS: The question is, according to the document from the Department of Energy I have, the smaller particles get through at an easier access and a lower filtration percentage than the higher ones. What are the size of the particles? And you don't know. Take the size of those particles and run them through the filter -- if 50 percent of the particles --

MR. MACDONALD: What is the question, Peter?

DR. RICKARDS: Question is, are you going to do the tests on the HEPA filters before you dig this stuff up?

DR. KOLTS: The answer is yes.

DR. RICKARDS: And you're going to document the size of the particles in that pit?

DR. KOLTS: We are going to document them that they don't go through the filters, and whatever it takes to document that, we will do.

DR. RICKARDS: Nels, did you hear that? They are not going to do it, but it's a promise. At any rate, next question.

DR. KOLTS: Instead of accusing us of not doing or doing things, why don't you ask us what we are going to do? Then if you don't like it, give us the benefit of your knowledge.

DR. RICKARDS: A year ago I asked you if you were going to do it and --

DR. KOLTS: No, you didn't ask me anything. I wasn't here a year ago.

DR. RICKARDS: Excuse me, but these gentlemen behind you were.

DR. KOLTS: A year ago those gentlemen couldn't answer it any more than they can answer it tonight. These are project managers.

DR. RICKARDS: Let me explain it again. Basically they have chosen to ignore my comments about stabilizing it first.

MR. MACDONALD: No. Again, we haven't chosen to ignore any comments. We have not chosen to ignore any comments. Now, what is the question, Peter?

DR. RICKARDS: This gentleman just said he would promise to do HEPA filter studies. And when I told Nels to make note of it --

MR. MACDONALD: Again, that is not what he said.

DR. RICKARDS: What did you just say? I asked you if you were going to document the size of the smaller particles --

DR. KOLTS: No.

DR. RICKARDS: -- and test them on HEPA filters before you did this.

DR. KOLTS: No, no, no. That is what you asked. What I told you we were going to do, and listen very carefully --

DR. RICKARDS: Don't patronize me. Just go ahead.

DR. KOLTS: I can harass you back just as much as you can harass us. Turnaround is fair play. If you want to be civil to me, I will be civil to you.

We are going to test the proposed filtration system that they have proposed to us which consists of several HEPA filter banks, ceramic filters and electrostatic attractors if needed. We are going to test them on INEL soils, on simulated Rocky Flats sludges, on surrogates that consist of cerium, uranium and thorium. And we are also going to do laboratory tests on plutonium itself.

We are going to measure how much goes into the filtration system and the scrubbing system and we're going to measure how much comes out. We are going to do it at level three EPA standards. And if Dean and the EPA and the DOE and potentially you find that the filtration that is achieved is unacceptable, these companies will not go on to a Limited Production Test at the INEL. That is what we are going to do.

DR. RICKARDS: So you have promised to study the HEPA filters on these particles as opposed to --

DR. KOLTS: We are going to study what goes in. We are going to study what comes out. If nothing comes out, I am not going to promise you that we are going to do a full electron microscope study of the particle size distribution. But if we have -- if the companies have a lot of problems with particles going through the filters -- and I have every bit of or much more concern than you do. I mean, I'm the one that's going to sign on the dotted line at the DOE and say, yes, I think this is working.

If they have problems with particles coming out, we will go back, we will look at and see if there is a correction that can be made to solve the problem. If it can't be, they don't have a process and we don't have a cleanup. It's as simple as that.

DR. RICKARDS: For the record, the standard procedure is to use HEPA filters, calculate them at 99.97 percent, not a hundred percent, but 99.97 percent, efficiently, and that is it? You just simply do a DOP test. And if they meet the DOP test, they are accepted. And what you said is you are not going to rely just on that standard?

DR. KOLTS: That's right.

DR. RICKARDS: You are actually going to test the HEPA filter?

DR. KOLTS: You betcha.

DR. RICKARDS: So when you promised to test the HEPA filter, I just said to Nels, make note of it.

DR. KOLTS: Who is this Nels?

DR. RICKARDS: He's a reporter.

MR. NOKKENTVED: I am a reporter.

DR. RICKARDS: The teller of the truth to the public here.

MR. MACDONALD: No, excuse me. She is the teller of the truth to the public.

DR. RICKARDS: There you go. But I literally said there was a promise made to test the HEPA filters, and not just trust the 99.97 percent calculation.

DR. KOLTS: That's right.

DR. RICKARDS: And I just said that was the same promise that Jim Wade made and hasn't done yet. And I doubt if you will do it.

MR. MACDONALD: That's enough.

MR. WADE: The promise that was made a year ago was -- because we didn't have the processes yet -- if HEPA filters are used, we will do that test. That is a promise from a year ago. That is why we haven't gone and done a HEPA filter test.

Now that we know that the HEPA filters are going to used, we are going to test them. We didn't need to go to a HEPA filter test if they're not going to be used in the process.

MR. MACDONALD: Hold on, now. Wait.

DR. RICKARDS: I am anxiously awaiting the results. We will just leave that question as it lays.

MR. MACDONALD: If you have questions to ask, we will take questions. If you've got accusations and comments to make, we will go to the comment period. Anybody else has questions, I would like to let them have an opportunity. If they don't, we will go to the comment period.

MR. RICKARDS: I have a question. Alternative five, which is Complete Removal, Storage, and Off-Site Disposal, why aren't you using that as opposed to returning any radionuclides to sit over our aquifer?

MR. MACDONALD: Why aren't we using alternative five? Fred.

MR. HUGHES: There are several reasons. First of all, alternative five is nothing more than digging up the entire pit, putting it in barrels or some sort of storage module, and putting it in storage. You don't treat any of the nitrates. You don't treat any of the hazardous or combustible materials. You just dig them up and throw them in a barrel.

DR. RICKARDS: So?

MR. HUGHES: In alternative five, what happens a year after you've dug it up and nitrates eat through or the lid pops off? That is the downside of alternative five.

In alternative four we are treating all those hazardous materials before we send a smaller volume to storage that is stable. So we are assuring ourselves that the material that is going into storage is safe, stable, and can be monitored.

DR. RICKARDS: Can I ask you to please document where these materials are going to eat through the barrels? They say these barrels when they bury this stuff in there -- they store hazardous materials in barrels, all by themselves, totally concentrated -- they say they last hundreds of years. Whatever they store these materials in, why don't you just store them in it?

The basic question is, as far as Idaho is concerned, you are returning at least, at the very least, ten nanocuries per gram of material back, of which you can't quantify how much that will be for Pit 9 or for the whole RWMC.

And as far as Idaho's health is concerned, which Dean Nygard is in charge of protecting, alternative five is beautiful, Complete Removal, Storage, and Off-Site Disposal. You don't return that. You don't return ten nanocuries per gram. And I will answer the question better than you did. The reason you're dismissing alternative five is --

MR. MACDONALD: What is the question?

DR. RICKARDS: The original question is why aren't you using alternative five?

MR. MACDONALD: Do you have another question?

DR. RICKARDS: Yeah. Basically, your document says you are dismissing alternative five because of the greater volume reduction. And as far as I have seen at these other meetings, human health is the number one priority. Volume reduction would be secondary to that.

As far as Idaho is concerned, the question will be, as far as Idaho is concerned for the next 200 years in our aquifer's protection, why isn't alternative five, protecting Idaho's health, better and why isn't Dean Nygard fighting tooth and nail to get alternative five?

If we have barrels that contain hazardous waste, why don't we just use them for a hundred years and a hundred years from now rebury them? Why are you reburying this for the sake of convenience?

MR. NYGARD: Alternative four does treat the source as is required by federal law, so it satisfies two requirements; it removes the source of the contamination, it reduces the volume of material, the material placed back into the pit, that ten nanocuries per gram of material will not pose a threat to the aquifer.

The modeling runs that were done on that are contained in the administrative record and you can review that.

DR. RICKARDS: Okay. Can I ask you a question?

MR. NYGARD: And we have had our hydrogeologists review that. In fact, we've had two of our hydrogeologists review that. EPA has reviewed that modeling effort. They concur. Now, that is the primary reason for number four.

We have got federal law, protection to human health and the environment. You are totally correct there. From our perspective, removal of that material, you still have the same kinds of problems. You bring it up, you still have to control all of the material. Alternative four does that. It actually treats the material.

To remove all of Pit 9, repackage it and store it, is unacceptable from a federal law perspective which says you must treat it and take it out. It really doesn't solve the problem because you are still stuck with the material in the future, so that is the attractiveness of alternative four, plus we don't have a final proposal.

DR. RICKARDS: So you are saying it's violating federal law because you have to treat it?

MR. NYGARD: You are required to treat that material, yes.

DR. RICKARDS: Isn't it just simply placing it in a barrel and containing it, you barrelize it?

MR. NYGARD: That is not what is being done in alternative four.

DR. RICKARDS: You guys have a fetish for juggling this material around. As far as I'm concerned, there's no excuse for not to contain it.

MR. NYGARD: What is your question? That is a comment.

DR. RICKARDS: On these individual particles that are going to be returned, can you tell me how many millirems per hour -- for example, in the second accident, the cesium particles that came out, Dennis

Hurtt admitted they emitted three millirems per hour on human contact, where the standards that you are trying to prevent here is three millirems per year.

So if we were to contact a three millirem per hour particle, individual particle, that would greatly exceed that three millirem per year. Do you know the individual particle millirem per hour?

MR. NYGARD: I don't have the answer to that yet.

DR. RICKARDS: Yet you are assured that reburying this unknown quantity, literally billions of these particles over our aquifer, particles that last 200 years, you are assured that that won't in any way threaten our health, especially compared to alternative five where --

MR. NYGARD: We are as assured as we possibly can be based on what we know.

MR. NITSCHKE: Actually, probably even safer because you have barrels out there that people have to go and monitor and get that daily exposure. What they are planning to do is remove a minuscule amount of -- I mean, re-emplace a minuscule amount of material underground in a stabilized form that won't reach the aquifer, and based on -- depending on what the waste form is. But even looking at those calculations -- I don't have the numbers off the top of my head -- even in the forms they are in today, it's thousands of years prior to reaching the aquifer.

So what you are really doing, you're blocking a pathway. You can't have a risk just because there's a plutonium atom. You have got to have an exposure route. It's got to have a way of getting to somebody. It's much more likely to get to somebody if it's sitting on the surface in the barrel than if it's stabilized and buried in the ground.

MR. HUGHES: The big risk from plutonium is it's an alpha emitter. And you either have to ingest it through your mouth, breathe it in, or get it through a cut. It's not a beta or a gamma emitter.

DR. RICKARDS: Now, the americium is definitely a gamma emitter and you don't have to ingest it. But, literally, volume -- the WIPP Executive Summary from October 1980, paragraph -- chapter two, page one, what the DOE scientists say is there is no suitable geology at the INEL for burial of these long-lived radionuclides.

That directly contradicts Dean Nygard's assumption that it's wonderfully safe to bury unlimited quantities of ten nanocuries per gram of material.

MR. NYGARD: It's not an assumption. It's an evaluation that has been done by two hydrogeologists, and I would say that that is more than an assumption.

DR. RICKARDS: Okay. But now from this pit, we do have plutonium detected at 240 feet down, right?

MR. MACDONALD: Not true.

DR. RICKARDS: Not true? There has been no detection of plutonium?

MR. MACDONALD: From this pit, we don't know.

DR. RICKARDS: So you denied it, but now you are saying you don't know -- you're really -- just highly unlikely in another pit to cross. We do have plutonium at 240 feet.

MR. MACDONALD: What is the question?

DR. RICKARDS: Have you detected plutonium at 240 feet yet?

MR. MACDONALD: The answer is no.

DR. RICKARDS: Nels, have you ever heard that?

MR. MACDONALD: What we found at 240 feet, there is evidence that there is plutonium there. There has been no confirmed -- there is no sample, analytical sample out there that shows that you have got plutonium at 240 feet. There is the plutonium at 110 feet.

DR. RICKARDS: What this gentleman says that he has documents that it will take thousands of years to reach the aquifer?

MR. NITSCHKE: For particular waste -- you are leaping in and out of context. It's really hard to communicate here. What we said was in the stabilized form that they are going to return ten nanocuries per gram of material to the pit, will take literally thousands of years to get to the aquifer.

Now, we are not saying if someone had some contaminated material and a flood came and washed it down there, it would take that thousands of years. So those are two different questions, you know. In a particular form, based on a particular infiltration rate, it is going to take a certain amount of time. You change those parameters, you get a different answer.

MR. MACDONALD: Would you like to know what level is found at 110 feet?

DR. RICKARDS: It's a trace. I already know the answer to that. But in the Vadose Zone --

MR. MACDONALD: Femtocurie per gram.

MR. NYGARD: Explain what that is.

MR. MACDONALD: A nanocurie is ten to the minus nine.

DR. KOLTS: It could be ten to the minus twelve.

MR. MACDONALD: Or ten to the minus fifteen, which you would find if you went out, by the way, and analyzed and picked up some soil somewhere.

MR. NITSCHKE: You may find that it would be higher.

DR. KOLTS: If you are scared of that, you shouldn't hike anywhere in Idaho. You wouldn't even have to go to the Columbia River. The Snake would be all right, and it's natural.

DR. RICKARDS: Elsewhere in the aquifer, if you go down 110 feet, you won't find any bomb testing.

MR. MACDONALD: One hundred ten feet is not in the aquifer.

DR. RICKARDS: If we go down toward the aquifer at 110 feet anywhere else -- back on -- radiation from bomb testing is on the surface. And you are trying to minimize what is in the Vadose Zone and that is an unknown quantity. When we come to the Vadose Zone --

MR. MACDONALD: Not trying to minimize what is the Vadose Zone.

DR. RICKARDS: Well, this guy just said, if you're afraid of that, don't go hiking in Idaho. I mean, how patronizing can you be? You don't even know how many millirems per hour those particles are. See, what you do is you take grab samples, and if you grab them, you say there it is. Literally, in the Vadose Zone what they emit is --

MR. MACDONALD: Is there a question here somewhere that we are missing?

DR. RICKARDS: Okay, I'll put it into a question.

MR. MACDONALD: Nels apparently has a question.

MR. NOKKENTVED: What is the background of the surface as compared to the ten to the minus fifteen? Is that close to the same thing?

MR. MACDONALD: Yeah, I am not sure if there is a statewide background calculation.

MR. NITSCHKE: We have got some numbers -- well, Dean knows, and this may not mean anything to others, but our Track 1 Guidance document has background levels for soils, background levels are published nationwide. For fear of quoting the wrong number, I won't venture a guess, but there are numbers, fractions of grams.

MR. MACDONALD: We will get you a number in the morning.

MR. NYGARD: I can remember discussing this when we were out at the site, if there's samples --

MR. NITSCHKE: There are calculations per gram, of that order, but it could be fractions of that as well.

DR. RICKARDS: Do you have any idea of the quantity of radionuclides in the Vadose Zone?

MR. MACDONALD: Quantity of radionuclides in the Vadose Zone?

DR. RICKARDS: From these various pits.

MR. MACDONALD: At the RWMC?

DR. RICKARDS: Yes.

MR. MACDONALD: No.

DR. RICKARDS: So let's not pooh-pooh how small a sample you found. When you take a --

MR. MACDONALD: No, I am just trying to put it into perspective.

DR. RICKARDS: It's an asinine perspective. You have no concept. That's the bottom line, you don't know. If half of this material has leaked out, you don't know. When you take a grab sample, you only know --

MR. MACDONALD: What is the question? What is the question?

DR. RICKARDS: I already asked it. And you said you didn't know.

MR. MACDONALD: Ask another question.

DR. RICKARDS: By returning this unknown quantity of material in a ten nanocuries per gram form, are you eliminating the alternative for excavation and off-site removal of the Vadose Zone?

MR. NYGARD: We're not eliminating anything. That's all dirt. This is a public meeting. We have comments on a proposed plan. This remedy has not been selected. If you have an alternative, a combination of these alternatives, something else that you think better meets the criteria, protection of human health and the environment, reduction of toxicity, mobility and volume, short-term effectiveness, long-term permanence, community acceptance, state acceptance, then this is your opportunity to convey that and that is what we are getting at. It's not a done deal. Okay?

DR. RICKARDS: I suggested them at the last meeting. And I don't see them up there as the two final alternatives in this room. So I will assume that you are not doing them. On these two alternatives that you are choosing -- let me finish -- on these two alternatives that you are choosing between, when you return an unknown quantity of americium and plutonium above the Vadose Zone and fill this in 16 feet deep above the Vadose Zone, as you piecemeal -- as the Department of Energy piecemeals its approach towards cleanup, by returning radionuclides 16 feet deep above the Vadose Zone, when the alternatives come on the separate Vadose Zone decisions, excavation, which I have recommended and submitted is impossible. You are sealing the fate. And again, it's against the NEPA law and --

MR. NYGARD: Actually, the alternative you recommended in your comments was vitrification down to the aquifer through 500 feet of basalt. That was your written proposal.

DR. RICKARDS: Absolutely. When you have an unknown quantity of radionuclides -- and I have to draw an analogy to it like a melanoma on the skin -- when you don't know where the cancer ends, you do a wider incision. And literally, to keep that above ground and contained, fits the medical definition, and your definition of protecting human health.

To ignore it, to ignore that there is an unknown quantity in the Vadose Zone and to not know the amounts that you are going to return, legally and whatever in here, is asinine. I mean, compared to alternative five, which is complete removal and off-site disposal, you are missing the boat for Idaho. You are not serving Idaho.

MR. NYGARD: Any other questions? Moderator?

MR. MACDONALD: Any other questions?

MR. NYGARD: If there are no questions, I would move we take a break and come back for comments.

MR. MACDONALD: Any more questions? All right. We will take ten minutes.

(Recess taken.)

MR. MACDONALD: We will take public comments. Anybody who wants to make a comment, we will take those verbal comments from people. It's the comments that will be responded to in the Responsiveness Summary. And as with all the other meetings, what we have done is kept the comments to five minutes per individual. If you have further comments beyond that, we would encourage you to go ahead and submit them in writing.

With that, does anybody have any comments they want to make on this proposed plan tonight? Okay. All right. If nobody has a comment -- we will accept written comments through the 21st of November.

(Meeting concluded at 8:45 p.m.)

REPORTER'S CERTIFICATE

STATE OF IDAHO)
) ss.
County of Ada)

I, CHRISTIE L. GARCIA, CSR, a Notary Public in and for the State of Idaho, do hereby certify:

That said hearing was taken down by me in shorthand at the time and place therein named and thereafter reduced to computer type, and that the foregoing transcript contains a full, true and verbatim record of the said hearing.

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 2 day of December, 1992.

Christie Garcia
CHRISTIE L. GARCIA, CSR
Notary Public in and for
the State of Idaho

My Commission Expires 12/16/93

ORIGINAL

REVISED PIT 9 PROPOSED PLAN

PUBLIC MEETING

Boise, Idaho

November 9, 1992

Reported by:
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BOISE, IDAHO, MONDAY, NOVEMBER 9, 1992, 7:00 P.M.

MR. MACDONALD: Good evening, and welcome to this meeting to discuss the Pit 9 proposed plan. My name is Don Macdonald. I am the Buried Waste Program Manager for the Department of Energy, Idaho Field Office. I will be acting as the moderator tonight for this meeting. My primary responsibility is to oversee all of the environmental restoration activities at the Radioactive Waste Management Complex, which I will explain here in a few minutes what that is.

This public meeting tonight is an opportunity to inform members of the public about the proposed plan for the Pit 9 cleanup project to allow you to get questions answered, to allow you to get some information and some detail about what the alternatives that were considered are and the preferred alternative for this cleanup action is. It is also an opportunity for you all to make any sort of formal comments that you want to make tonight on that proposed plan.

There is a formal public comment period that is open. And we are accepting comments, both verbal and written. The comment period will be open to accept written comments through November the 21st, 1992. You can, as I said, give us verbal comments tonight and we will take those down. There are also some yellow sheets like this that are back on the table. If you want to write out a comment tonight, you can do that on these yellow sheets and leave them.

For those of you who might not want to stand up in front of a group and give some sort of comment, if you don't feel comfortable with that, we have got an arrangement back here, if you want to give a verbal comment, there is a tape recorder back on the back table back here and we will get somebody to help you out and you can give a verbal comment on the tape recorder.

Also, I want to make sure everybody understands we have a court reporter here with us tonight. She will take a transcript of the entire meeting, the presentation, the questions, and answers, and the formal public comments. The transcript of this meeting will be placed in the Information Repositories throughout the state once the transcript is prepared. So that will be a part of the record.

There are some other people I would like to introduce tonight. We do have representatives here from the other two agencies involved in this project. First of all, I would like to introduce Mr. Dean Nygard who is here from the Idaho Department of Health and Welfare.

MR. NYGARD: I will be very brief. It looks like quite a crowd. Congratulate yourselves because this is I think the largest attendance we have had at a meeting. And it does appear that some folks here perhaps are writing papers or have a project due.

AUDIENCE: Extra credit.

MR. NYGARD: We will try to be concise, so you will get good grades. I am Dean Nygard. I am with the Idaho Division of Environmental Quality. I am the project manager for this agreement, worked in negotiation of the Federal Facility Agreement and Consent Order, which is the overall cleanup agreement that the State and EPA have entered into with the Department of Energy. This is one of many cleanups that will be ongoing at the INEL in the years to come. We have been here with several proposed plans already in the past year since the agreement was signed December 9th of last year.

I will be here in the second row. If you have any questions about the State's role in the cleanup activity, please feel free to bring those up, write them on a card, address us verbally. And I will be available at the breaks if you have any questions then regarding our role. Thank you very much.

MR. MACDONALD: Thanks, Dean. I would now like to introduce Mary Jane Nearman. Mary Jane is with the

Environmental Protection Agency, Region 10 out of Seattle.

MS. NEARMAN: Hi, as Don was saying, I am the environmental engineer through the EPA in Seattle working specifically on the Radioactive Waste Management Complex at INEL. EPA has been working with DOE, first under the RCRA program, doing some RCRA corrective actions and RCRA inspections, and now most recently, on the Federal Facility Agreement under the Superfund program.

We welcome any comments you might have. It's been a year since we were here. We hope that we address the comments from the first draft of the proposed plan in this revision, and again welcome any comments, additional comments you might have. Available at the break as well.

MR. MACDONALD: For those of you who may not have, if you want, there is an agenda for this meeting tonight. Let me go through this agenda so you understand the format. I have explained that a little bit.

Myself and Mr. Jim Wade, who is here with me, who is the DOE Project Manager specifically for Pit 9, and Mr. Fred Hughes, who is the Project Manager for EG&G Idaho for this project -- EG&G is the management operations contractor at the INEL for DOE -- we will go through and give you a presentation and give you a background and some information on the alternatives that were considered, on the preferred alternative, and try to give you some detail on the proposed plan.

After that, we will take questions and answers from the members of the audience here. You can either --

MS. COOKE: I already have a request. If the presenters could try to avoid using acronyms and abbreviations.

MR. MACDONALD: We will take questions, either verbal questions or there were cards on your seats as you sat down tonight. You can write questions out on those cards. People will come around and pick those cards up. So you have got two methods in terms of asking questions.

Following the question and answer period, we will take a quick break and let everybody catch their breath for about five or ten minutes. And then we will come back and take the formal comments that anybody may wish to offer.

MS. MESSENGER: So then the questions and answers are not going to be on the formal record; is that correct?

MR. MACDONALD: The questions and answers are being transcribed by the court reporter. The comments are what will be responded to -- the formal comments are what will be responded to in the Responsiveness Summary. There will be a full transcript of the meeting, the presentation, questions, answers and the comments from the meeting tonight, in the Repositories.

The question and answer period, we are trying to make sure people can get information, if they feel they have a gap in information or something like that, to make sure that they understand as much as they need to understand -- they think they need to understand to give comments. The formal comments are what we will respond to in the Responsiveness Summary. So we will do that after a quick break, take those formal comments.

One other housekeeping piece here. There were a couple of -- after the plan went to the printer there were a couple of items that we noticed needed to be clarified. There is a green sheet, an errata sheet back here, that explains those two issues. One had to do with soils for -- and the distribution of soil and composition of the soil for an in-situ vitrification process. And the other had to do with clarifying what was going to happen with heavy metals in one of the specific treatment processes. So those errata sheets are in the back for anybody who wants to take a look at those, and I would hope that you all do that.

Let's go ahead and get started. The Idaho National Engineering Laboratory is a government, DOE owned facility. It's 890 square miles in southeastern Idaho, so this is the location of the Idaho National Engineering Laboratory, or INEL. This larger blowup here shows the boundaries of the site. There are a number of facilities located throughout this site. In the southwestern corner of the INEL is the Radioactive Waste Management Complex, or RWMC. The photo over here gives you an aerial view of what that facility looks like.

The RWMC was established in 1952 for the disposal of low-level radioactive wastes that were generated from site activities at the INEL. And it's this area from here, back up to the top part of the picture, is the area where waste has been buried. This area in the foreground is where waste is stored currently.

Starting in 1954, the INEL began accepting wastes from the Rocky Flats plant in Colorado. Those wastes contained plutonium and americium, which are radioactive substances. They are called transuranic elements. Sometimes you might hear them referred to as TRU, acronym TRU for transuranic.

Those wastes also contained solvents: carbon tetrachloride, trichloroethylene. Those are principally degreasers or cleaning solvents. They contained machine oils and cutting oils used in machine processes and manufacturing processes at Rocky Flats. Those wastes, as I said, we began accepting those in 1954. And from 1954 through 1970, those wastes were also buried in this area.

And one of the locations where those wastes were buried is what was called Pit 9. And Pit 9 is located right here in this part of the photograph. What we had here throughout this area was a series of pits which were dug and waste was disposed in, in a series of trenches, which waste was disposed in.

In 1970 we stopped burying transuranic waste out here and began storing it above ground. And that is what this area out in here is, is for the storage of that waste. That practice was continued up until 1988. Since 1988, no waste has come from Rocky Flats.

We do still dispose of low-level radioactive waste at the RWMC. And that is principally done in this area. And that is exclusively low-level waste. There are no hazardous wastes, as defined by RCRA, which is the Resource Conservation and Recovery Act, which governs hazardous waste disposal treatment generation. There are no wastes as defined by the Superfund law either.

So that is a brief background on where the INEL is, where the Radioactive Waste Management Complex is, a little bit of history about disposal practices and things at the RWMC.

I will turn it over to Jim Wade to give you some details on Pit 9 and lead you into the alternatives we have considered.

MR. WADE: Thanks, Don. Thanks for coming. I'm glad the weather broke so we could get this big of a turnout. Like Dean said, we normally don't get a big turnout, so thanks for coming. And you guys, I don't know what your teacher did, but to get this many people to come, it must be some heavy duty extra credit.

I am going to cover basic key things. The process as we described it is an interim action cleanup under the CERCLA process. CERCLA is one of those big alphabet names that stands for Comprehensive Environmental Response, Compensation, and Liability Act. That is a law that says if you've got waste sites like Don mentioned out here, the CERCLA environmental laws are what we use to go out and clean up these sites.

So I am going to talk first off, what is Pit 9, what are we trying to do as part of this CERCLA interim action, and how we are going to go about doing it. Briefly, how we are going to go about it. And then Fred is going to talk about specific technology.

As Don said, prior to 1970, we used to bury these drums of waste out at the site, in this area here. These next two pictures are pictures of what our disposal practices were back then. You've got to remember, this stuff is radioactively contaminated. So these guys, to play it safe, would just dump the stuff in and then walk away. With stuff that wasn't so badly contaminated or so highly contaminated, we would actually go to the trouble of stacking it in there. Again, this was all done before 1970, before we got smart and realized we better change the laws and we better change the way we do business to go about dealing with the disposal of this radioactive waste.

This next one gives us a picture kind of what Pit 9 looks like, as a cross-sectional view. You start out, you dig down -- let me put this one back up for a minute. You start out by digging a hole. We dig the hole down, in Pit 9's case about 18 feet, until you get to the basalt layer, a layer of hard rock that is down beneath all the soil and overburden.

Once you get down to this rock level, then for Pit 9, we went in and put about three and a half feet of soil on the bottom of the basalt -- or on top of the basalt before we put any waste in to act as a managing layer or just a layer so that you're not placing the waste right on the basalt.

We then mixed in the waste. And again, it was either placed -- dumped per this picture or placed per the other picture.

Now, as you can see, when you dump all this, all the void spaces, we just dumped in or mixed in the soil, which in the proposed plan we call interstitial soils, mixed in throughout to fill in the void space. Once the pit was full, six feet of overburden was placed on top of the pit to make the pit -- to keep the radioactive constituents and the hazardous constituents separate from workers or potential people on the surface.

Now, if we look at a top view, this is what Pit 9 looks like if you are looking at it from the top. One of the reasons we selected Pit 9 to do this cleanup action is because, as Don said, after 1970 we stopped disposing of waste in the ground; this type of waste, the transuranics.

Pit 9 was operated from 1967 to 1969. It was one of the last pits that was used to dispose of this waste form. From our shipping records and from our inventories of what went in the pit and when it went into the pit, this is our graphic representation of where the wastes are throughout the pit.

The Rocky Flats waste -- and I can't remember if Don hit on this or not -- the transuranic wastes that we describe are from Rocky Flats, a plant in Colorado, that was used to manufacture weapons for the U.S. to use in defense of our country. How's that? So when we say Rocky Flats wastes, that is merely where they are coming from, a plant in Denver. And the waste types again are transuranic wastes.

Now, the Rocky Flats wastes were put in this majority -- this part of the pit, although we believe they are interspersed throughout, because you can see the way we dumped them in, if you assume the containers have degraded and rusted through, whatever, we are assuming that the waste has been mixed throughout the entire contents.

There are also some large objects; reactor vessels, pick-up bed trucks, just an indication that anything that became contaminated was just dumped in those days, thrown into the ground and covered up and we didn't worry about it, until we got smart and realized now we have to go back and worry about it. That kind of describes what is Pit 9.

Now, again, I told you we were going to do an interim action to clean it up. Why do we want to clean this stuff up? Don mentioned it's got plutonium, americium, which are radionuclides which are around for a long time. They are radioactive and will remain so for hundreds of thousands of years. That is one of the reasons, the transuranics that are in this pit.

The other reason is it's got the carbon tetrachloride and the trichloroethylene substances that Don discussed that are hazardous materials. These materials being in Pit 9 pose a risk, a potential risk to human health and environment. This interim action will remove Pit 9 as a potential source of risk to human health and the environment.

The other reason we want to clean up Pit 9 is because -- back to this picture -- we are talking about this slice of pie right here. We have got this whole other slice that we have to worry about that contains transuranics and hazardous material. By attacking Pit 9, we are taking the first step towards cleaning up the entire site, while eliminating Pit 9 as a source.

That covers what is Pit 9 and why we want to clean it up. Now I am going to tell you how we want to go about cleaning it up.

The CERCLA process -- do I need to go through what CERCLA is or can I skip that?

MS. COOKE: No. Do you remember it?

MR. WADE: Yes, I think so. Thank you. Per the interim action process -- how is that-- we, as the

Agencies, being DOE, Department of Energy, the State and the EPA, determine that an action needs to be taken. In this case we have determined we need to do an interim action for Pit 9.

We then determine or come up with an alternative on how we go about performing that remedial activity. In this case we have got five alternatives. The first alternative, No Action, is given to us. The regulations say you have to consider no action as an alternative. No Action in this case means -- again, I am talking interim action -- that at the present time we don't do anything to Pit 9; continue monitoring it, continue institutional controls, but we don't go in and clean up the risk.

A final action would be taken per the CERCLA process -- and there is a graph back here to show the schedule -- but in 1998, a Record of Decision on a cleanup of the entire site, the TRU pits and trenches part of the entire site, is scheduled to be completed in 1998. So if we pick the No Action alternative now, it would be re-addressed in 1998 as part of the TRU Contaminated Pits and Trenches Record of Decision.

The next alternative that we identified in evaluating it was In-Situ Vitrification. I don't know how many of you saw it, but somewhere back there there is a nice little model that kind of shows you what the In-Situ Vitrification process is.

It's a process where you stick four huge electrodes into the ground and it uses electricity to generate about 1,600 degrees Celsius to melt this material in place. The in-situ part is in place. The vitrification part is the high temperature melting that turns it into a glass or obsidian-type material, and it's all one solid mass.

The third alternative identified in evaluating was Ex-Situ Vitrification. Very similar to in-situ with the exception of you excavate the material out of the ground, dig it up, throw it into the same type of high temperature melter or furnace and vitrify it in that method.

The fourth alternative, which is the preferred alternative, or the alternative that we, the Agencies, feel is the best alternative to use for this cleanup is the Physical Separation/Chemical Extraction/ Stabilization process. Fred has got a couple of slides that are going to get more detailed on that one, so I will just skip that one now, except to say that a year ago we issued a proposed plan with this alternative with the exception of stabilization. We have added stabilization because it's going to further reduce the mobility of the materials that are being treated to further make them safe prior to putting them in storage.

The fifth alternative evaluated was Complete Removal, Storage, and Off-Site Disposal. We go into Pit 9, we dig up all the wastes that are in there, repackage them in some form, and then they would go into storage, in some kind of a storage module.

These are the five alternatives that were evaluated. And again, alternative four is the one that we at the Agencies feel is the best alternative. Fred is going to go now into more of the detailed specifics as to what this really is.

MR. HUGHES: Thank you, Jim. One of the most common comments we got during the last round of public hearings was, how do you expect us to make any comments on your preferred alternative or the other alternatives? How do you expect us to have any sort of knowledgeable input into your process if you haven't told us anything about the technologies that you are considering in the preferred alternative?

What I want to do in the next few minutes is tell you how we went about selecting the two teams that are about to do some testing, what the project phases are and how we structured the project, and then to give you an overview of the two technologies themselves.

First of all, what we did in order to find out if there was any technology out there was we issued a Request for Proposal last year in the November time frame. What we said in that proposal was, here is Pit 9, here is where it is located, and here is the waste inside the pit. We didn't tell them that they had to use in-situ vitrification, we didn't tell them they had to use any of these. We asked them to tell us what technology they proposed to use to clean up the pit.

What we got before we sent out that request was roughly 18 teams of companies that said we are interested in bidding, please send us the Request for Proposal. When we sent the Request for Proposal out, we got back three bids.

We formed a source evaluation board of experts throughout the company: chemical experts, process experts, production experts, RadCon experts, people knowledgeable in wastes. And they reviewed those proposals that we received for five weeks. They were locked away in a conference room, nobody could talk to them.

They finished their review, they went to the companies, they asked questions, and they came back with a report. And they said one team is totally out. They don't understand. Their technology is not good enough.

They said the other two teams, Waste Management Environmental Services and Lockheed, offer the best technology in the world as we see it today. They are also essentially equal. So what we had was two teams that offered the best technology, but were equal.

What we have done is we have structured the project into three phases. What I hope you will see is that the way the project is structured and the features that both teams offer allows us to do several things on this project.

One, we want to do it safely. We are not interested in hurting you, the public; we are not interested in hurting the worker at the site or the worker on the project. And lastly, we want to protect the environment. So you are going to see features that allow us to do this project safely.

MS. COOKE: I just want to ask a clarifying question. Are you saying that you found these two teams qualified to do any of the alternatives, they were equally qualified? You said they were equally qualified or something like that.

MR. HUGHES: Both teams proposed processes to clean up the pit. In that review of those processes, they were judged to be equal in what they had proposed. They offered slightly different versions of the preferred alternative.

MS. COOKE: Did they offer versions of the other alternatives?

MR. HUGHES: No, just the preferred alternative.

MS. COOKE: So all we are looking at here, even though you've got other alternatives, is basically the preferred alternative of two contractors who put in the requests for that one alternative?

MR. HUGHES: Yes. However, if one -- if a third contractor or one of these had said in-situ is what we are proposing, then we would be talking about that in more detail. I also might add that even though we got two contractors and we are talking about the project phases, you, the public still have input into this process. And just because we say the preferred alternative is the way we are going, if you, the public, say, "Well, we think number three is better" and give us reasons why, and that is determined to be the right way to go by the Agencies, then that is the way we go.

MS. NEARMAN: Well, by way of clarification as well, if one of -- go ahead, Don.

MR. MACDONALD: One of these processes does in fact have, in essence, an ex-situ vitrification component to it, the stabilization.

MS. NEARMAN: One of the unit processes is actually -- their stabilization piece is a thermal process that is much like ex-situ vitrification. So they did use a combination.

MR. HUGHES: The second thing we are interested in doing with this project is we want to do it in a cost-effective manner. And lastly, we want to use proven technology. We aren't interested in R&D. And that is what we told all the companies that bid.

MR. NYGARD: R&D?

MR. HUGHES: Research and development. We weren't interested in doing research. We wanted proven technologies. The way the project is structured is in three phases. The first phase which will start sometime this month is called the Proof-of-Process phase.

In that phase both companies will demonstrate aspects of their process that we've judged to be critical to whether they succeed or not. They are going to test the processes and be graded to criteria that we've determined. They will do it at their own facilities. And they will do it using their corporate funds. We are not going to waste the taxpayers' money.

They have to pass all the tests before they will get reimbursed to a ceiling of eight million dollars. If they don't pass one aspect of the test, they don't get paid. So both companies are betting a lot of money or corporate funds that their processes work. And that is what we are interested in, proven technology.

At the end of the Proof-of-Process test, we are going to evaluate both teams and we are going to select one that we think is the best technology to clean up the pit. That team we will enter into negotiations with and we will enter into the Limited Production Test, the second phase.

During that phase they will erect a containment building over the entire pit. And they will install their full-sized equipment. They will test that entire facility using substitute materials before we'll allow them to uncover a limited part of the pit and dig up part of the waste.

I might add that in the first phase, they are also going to use substitute materials. They are not going to use any actual waste in testing their processes. So we are interested in doing the test safely. Assuming that they pass the second phase and that they demonstrate the entire process works, they go on to the last phase, which is the actual cleanup of the pit.

What I would like to do now is give you a brief overview of both processes. And I will start with the Lockheed team. What you will see in both teams' cases is that they are broken down into three main areas:

physical separation, treatment and stabilization.

In Lockheed's case, what they propose to do is at the dig face -- what I mean by dig face is, as they are going through the pit uncovering the waste, at that point where they uncover the waste, that is considered the dig face. What they propose to do inside that building is by using robots and remote operated equipment, is uncover the waste and start separating it into waste streams: large items, there is a reactor vessel in there, there is a pick-up bed in there, non-soil, sludges, glass, metal, and then contaminated soil.

The other thing you will see in both processes at various steps along the way, they are constantly testing to see what material is clean, what material meets the return to pit criteria, so that it could be returned to the pit instead of being placed into storage.

What they propose to do with the three waste streams is for the large items, if it's determined it has to be decontaminated, they will do that inside the pit and leave the clean material there. For the non-soil, they send it directly to their high temperature treatment, which is a Plasma Arc Melter. It operates at 3,000 degrees Fahrenheit, and basically turns any material that is sent to it into a glassified final waste product. It looks like obsidian. And it's called -- and it's similar to iron enriched basalt.

The contaminated soil they send to their chemical treatment process. In this area they are doing several things. First, they strip off the organics, the carbon tetrachloride, and send that to the thermal melter. The remaining soil they separate into two sized streams. The material that is less than ten microns, which they say will contain mostly your transuranic contaminated material and your other hazardous materials, that material they send to a nitric acid bath which strips off your transuranic material, which is identified as TRU waste here, and that is sent to your thermal melter for stabilization.

The other soil that is greater than ten microns they send directly to the thermal melter. Along the way, they are testing for the clean material and the material they can return to the pit.

This is the heart of their process. This is the step that stabilizes the hazardous material. It stabilizes the transuranic material in a stable matrix. All the material is formed in this glassified material. Any gases that are created are sent through a gas scrubber system, which is monitored and tested before it's released to the atmosphere to make sure we meet the requirements of the Clean Air Act.

There is a final test to see which material is clean. And then the remaining materials are put into storage. So that is the Lockheed process.

Waste Management does something similar to Lockheed. They separate the material into waste forms. Large items, greater than two inches -- and the reason for this is that their chemical process cannot handle material greater than two inches, and then less than two inch material, which is primarily your soils and your sludges. And you will see that they also test along the way for clean material.

Large items and greater than two inches, they reduce in size, they shred and they decontaminate inside the pit. Less than two inch materials, your soil and sludges, goes to a chemical treatment process. And this is the heart of their proposed process.

The overall goal in this area is to take all the solids, all the soils, all the sludges, and turn them into liquids. So they add various chemicals in this phase, extract solids which are clean now, because the hazardous material has been turned into a liquid phase, and is readily stripped away from the remaining solids.

They test the solids to make sure it meets criteria for return to the pit. They send the liquids which contain transuranic material and your other hazardous material to an evaporator where they boil off hazardous components that will vaporize at less than 110 degrees. Any gases formed are also sent through an off-gas treatment, processed and tested and monitored before it's released in the atmosphere. Then they send the concentrate, which contains hazardous material, into their stabilization process and ultimately into storage.

In summary, we are going to do this project safely. We are going to protect the public, the worker and the environment. We are going to do it cost effectively. We are not going to waste your money. And we are going to do it using proven technology. If there's any questions, we will be happy to answer them.

MR. MACDONALD: Let me clarify one thing to make sure people understand two key things, I think. One, we are going to end up with waste products out of this that we are going to end up having to store that contain the great bulk of the plutonium and the americium. That stuff is going to be stored until some ultimate disposal site is found for that material, because there is not one identified at this point.

What we have done with that stuff is get it out of the ground and into a facility where it can be managed and it doesn't pose a threat, the threat of being released to the environment that we think it poses being left in Pit 9.

The other thing is a large amount of the organic materials, those solvents that I mentioned, and some of the other hydrocarbon materials, oils and things, are going to be destroyed in this process, so that they are no longer hazardous materials. So I wanted to make sure that is clear to folks.

MR. USHMAN: This thermal treatment center here they have on this proposed one here, this feed, that unit, do they add sufficient quantities of materials in there to ensure a proper classification project?

MR. HUGHES: Yes. They are constantly monitoring the feed to make sure they have enough soils and other materials to make sure that that final waste form, that stable, glass-like material, is exactly what they wanted.

MR. USHMAN: You have already so stated prior to this that the type of soils we have here are not the ideal type of soils in order to form a glass cubit. What I am asking is, will they be adding silica sand and potash and things of that nature to ensure they get a proper glass cubit out of it?

MR. HUGHES: What I am going to do is let Dr. Kolts, he is my technical advisor, answer that one for you.

DR. KOLTS: Yes and no. I am interpreting the basis to your question that when you read the proposed plan it said specifically that you didn't have the -- potentially didn't have the right quality of soil to form a good melt. The reason is when you use in-situ vitrification, you shove four electrodes down. If you shove four electrodes down the middle of this pile of barrels, you don't have any soil.

So that was the basis for that comment. Over here in this process, what they are going to do is there has been several studies done at the INEL on iron enriched basalt, and that is what will come out of here. And they know what the right ratio of soil to waste is. So they will adjust their process and add that amount of soil so that they always get iron enriched basalt.

MR. WADE: Another quick point. The question you asked about the soil concentration being -- or the soils being not of the right concentration. That is one of the -- Don mentioned earlier there was a mistake in the proposed plan. And that specifically was it. Not so much the soil composition was not adequate, but the amount of soil within, mixed around the waste was not adequate.

MR. BJORNSEN: On the Lockheed plan I have a question where it shows that greater than ten microns goes up to physical separation and then over to thermal treatment. And you indicated that that likely -- or the impression I got was that TRU waste was less than ten microns in going to chemical leach.

Now, why would some of it be greater than ten microns and still not have those TRU components that would be desirable for chemical leach first? In other words, why is the ten micron cutoff there to decide what goes to chemical leach and what goes back through the process?

DR. KOLTS: This physical separation is basically what you find in the mining and ore industry. And it works -- let me answer your question in order. Why do they separate less than ten and greater than ten? Traditionally, what they found, the less than ten microns has a very high surface area.

Less than ten micron material will not work in this system. It simply fluffs up as a dust and it doesn't work. So there's no way to get the TRU, the transuranics, off of the less than ten micron material unless you chemically extract it.

The greater than ten micron material goes up into this system. And this is the mining system with the trommels and vibrators and separators, you've got a magnetic separator in there. And what it does is it separates it out into various components. And then it has a radiation detector, smooths it out in very fine material, detects the radiation, that that's contaminated, it gates it off, and then it goes up to this system that is uncontaminated, it gates it off into a clean soil system, rechecks it, and if it is indeed clean, then it goes to disposal.

MR. BJORNSEN: That answers it. Because it seemed as though the only TRU waste, according to the little graphic up there, was coming out of the chemical leach. So we have got TRU waste going through that also?

MR. HUGHES: Yes, what they are saying is the majority of the TRU is coming through this path.

MS. JORGENSON: I had a question about the project phase. I thought you said that phase one is going to start sometime this month.

MR. HUGHES: Yes.

MS. JORGENSON: Basically this alternative is the one that is going to be used?

MR. WADE: No.

MS. JORGENSON: And why would they invest all that time and money if it wasn't fairly certain?

MR. WADE: Let me put both of these up here and let me go through my brief description. In reality what we are doing is two things at once that are tied together but not really tied together.

We, as the Agencies, are coming forth with a proposed plan that identifies these alternatives on how we want to clean up Pit 9. Public comment is on, are those alternatives -- is this really what we want to do? That decision hasn't been made yet. That will be made in a Record of Decision scheduled sometime in the spring of '93.

If we as the Agencies, based on public comment, based on any number of things, determine this isn't the way we want to clean up Pit 9, that will be so indicated in the Record of Decision. We can identify any alternative to do the cleanup or an alternative that is not even on the list. So the interim action phase is on this chart.

The project phase is something that we, as EG&G and DOE and the Agencies, are doing to determine if there is a physical separation/chemical extraction/ stabilization process that will work. As Fred said, the companies are doing this on their own money. They are betting their finances, number one, that this is going to be the preferred alternative. If it's not, however, we will still have done this phase of the test and we still have that information to use to do subsequent cleanups at the site. So they are related, but they are independent. Does that answer your question?

MS. JORGENSON: Yes, that answers the question.

MR. WADE: It's kind of a gray area, but they are independent of each other.

MR. RAGAN: I have two questions. My name is George Ragan. I guess related to this, if it proves to be effective, will then the group that -- they are both going to be doing their work now, this Proof-of-Process?

MR. HUGHES: Yes, they are both competing against each other.

MR. RAGAN: If one of them gets the bid, so to speak, will that be it, a bid? Is this what they are doing?

MR. HUGHES: What we have done is we have come up with some detailed criteria that they have to pass. For example, in the Lockheed -- in the Waste Management case, they have to test this integrated system right here. They also have to demonstrate that this final waste form will meet the acceptance criteria for the INEL.

Over in Lockheed's case, they have to demonstrate this entire plasma system works, including the gas scrubber, the feeders and the handling system for the melted material. They have to demonstrate that the waste form meets the acceptance criteria. They have to do some testing down here in the chemical extraction area.

And then both teams have to test a radiation monitor that they are going to use at the dig face to show whether it's less than ten nanocuries -- or can detect plutonium at three feet.

MR. RAGAN: So once they go through these phases, next spring when you make a decision, will one of those then go on?

MR. HUGHES: This Proof-of-Process phase is one year in length. And they have to pass all the criteria to be considered for the second phase.

MS. MESSENGER: Or what?

MR. HUGHES: If they don't pass, they don't get paid and they are not considered and we will have to go back to, like Jim said, and put Pit 9 under the TRU pits and trenches and consider it in the future like the rest of the pits and trenches.

MR. MACDONALD: Following this Proof-of-Process test, if they both meet all the criteria, we will select one of those, and assuming we're going with the physical separation/chemical extraction/stabilization alternative, one of these two teams will be chosen to proceed with the Limited Production Test and the interim action. If none of them pass, then we will not proceed with doing the interim action.

MR. RAGAN: You would start all over again with this? Would you find another company or put out new bids or --

MR. MACDONALD: We believe that in terms of what exists in the world today, particularly in private industry, that this represents the best technology and the only available technology out there that is mature enough to the point where it can do a cleanup job at Pit 9.

MR. HUGHES: The chance exists that we could have both teams fail. But keep in mind that both of these teams, they are large corporations, they are not about to invest eight million dollars if they think they're going to fail.

MR. RAGAN: I guess the follow-up to all of this is, when we get to full production, would one of these teams then go on and finish the rest of the cleanup in the pit area or would they have to go through a new process?

MR. MACDONALD: We are just talking about Pit 9 here. Any other pits and trenches, we will go back through the process.

MR. HUGHES: And follow a similar process.

MR. RAGAN: Another question is, is there any potential use for these solid wastes, like that glass, obsidian? Can you use it for anything?

MR. HUGHES: I don't see --

MR. MACDONALD: There is no use.

MR. HUGHES: It is highly radioactive material and hazardous material.

CAPITAL HIGH STUDENT: Yes, back to the Lockheed part. The chemical breakdown, I believe, of organic materials, did you plan on, like, burning those or were you going to chemically alter those?

DR. KOLTS: Excuse me?

CAPITAL HIGH STUDENT: The organic materials, are you going to plan on burning them or are you going to chemically alter them?

DR. KOLTS: They go into the melter, the melter runs at 3,000 degrees Fahrenheit, they will be decomposed. Carbon will come out as carbon dioxide. The chlorine will come out as hydrochloric acid. It goes into the gas scrubbers, it's neutralized with sodium hydroxide, and ends up as table salt.

MR. BJORNSEN: On the Proof-of-Process test, if you will, now, is this going to be primarily an actual physical test with simulated waste or are we talking computer modeling, simulations? What is the actual Proof-of-Process?

MR. HUGHES: The Proof-of-Process test is actual tests using an actual melter up in Butte, Montana, using an actual integrated chemical system at a South Carolina, Clemson Technical Center. We, EG&G, are going to be making sludges that are the same ratio, using the same processes that were used at Rocky Flats to make their sludge.

The only difference will be we will be using surrogate material. We will be using uranium, thorium and cerium to simulate the plutonium. We are not interested in messing up their system with plutonium, so we are going to use actual sludges.

MR. BJORNSEN: So there will be short-lived radioactive materials as opposed to the transuranics?

DR. KOLTS: In the thermal system we will use cerium only, because cerium mimics very closely the behavior of plutonium at high temperature. In the chemical leach, the solvent extract, as well as all of these, we will use cerium, uranium and thorium. That is to mimic the actinide chemistry in the correct oxidation states.

In addition to that, we will do small scale laboratory tests that will give us correlation coefficients between the surrogates and real plutonium. So we are not just assuming that cerium or the uranium is going to be one to one. We are going to have an actual correlation coefficient developed in the laboratory so we will know what it is.

MR. HUGHES: The other point is, both companies have to develop and show us and we have to approve treatment plans for any waste that is generated during the Proof-of-Process before we will actually allow them to go off and do the test.

MS. COOKE: It really strikes me, the more I hear about this, what you really have here is six alternatives, maybe. These are actually two very separate alternatives. And that if we wanted to follow, which I hope we would, a process that involves public comment as much as possible rather than have the public drift off now, looking at these fairly general categories, these are very specific proposed actions to me.

I can see why there could be some real important decisions to be made all the way through here about what is working and which one to go ahead on. It really seems wrong to me and a gross generalization to call both of these simply number four.

There are just all sorts of questions that I have about different things I have written down. They are not number four. You have four and five, or five and six, or something, but I don't understand why they are lumped.

MR. HUGHES: What you're saying is true in part, but the reason they are under alternative four is that both teams propose physical separation. That is alternative four. They are both proposing to use robot operated equipment and robots and excavate the material out of the pit, so that is part of alternative four.

The other reason they are both lumped under alternative four is they both propose to use chemical extraction techniques. In this case, this is a little more robust than the Lockheed case.

The primary difference between two alternatives is the stabilization phase. This one uses a high temperature process. This one uses lower temperature, special drying and chemical compounds to bind the material.

MR. MACDONALD: We have done something here that normally -- one of the things we are trying to do as an interim action is to deal with something that we think is a relatively near term, poses a potential near term risk. What we have done in part in this project to make sure that process is flowing efficiently and try to not work things strictly in serial, which happens a lot of times, is in essence take what normally happens in the remedial design and remedial action phase, and start pieces of that up front.

If you look at any other action you might be taking on any other Superfund site where you've picked an alternative, ultimately what you're going to go out and do is look at different technologies that might satisfy that alternative, that are within that family of treatment technologies, is what we are looking at here, several different families or styles of treatment, perhaps.

MR. COOKE: Well, if I can do a follow-up. My experience in working with NEPA -- there I go using an acronym myself -- is that when you are making your selection of which alternative to use, you are talking about the processes. And this is saying, accept the alternative and we will go off and decide the process.

MS. NEARMAN: The way the Superfund program is set up, during the feasibility study when alternatives are evaluated, you choose treatment types and representative process options within that treatment type. As Don was saying, typically this level of detail is not even developed until the design stage. So in a more common type of proposed plan you might see air stripping, which is a physical treatment versus some sort of biological treatment or some sort of thermal treatment. And those categories are reflected in the different alternatives.

This type of process knowledge, if you choose chemical physical treatment of a landfill leachate, for instance, in a proposed plan you would not necessarily see whether you were using, what type of exact unit processes you might anticipate seeing. That would be in the design phase.

So as far as Superfund usually goes, you have different types for alternatives with a representative process option. This level of detail is typically in design.

MR. TAYLOR: My name is Jack Taylor. I hope I am not confusing things. I was here a year ago. I understood you to say in the unlikely event that both of these teams failed to meet all the criteria, that you would move on to other things as opposed to concentrating on Pit 9?

MR. HUGHES: What I said was if both teams fail, the Pit 9 project itself will be rolled into the TRU pits and trenches. And then it will be just considered another one of the TRU pits and trenches, and a similar process will be used. We will go out and look at alternative technologies, come out with a proposed plan, and then come up with a Record of Decision for that.

MR. TAYLOR: The confusion is, I think last year this was identified as number one, because it was at the top of the Superfund list. And there has got to be a point when you do what NASA did, when they had their disaster, and that is to shut down until you learn how to do it. If this is the most critical cleanup area on the Superfund list, I can't see you moving on, abandoning it, without stopping and doing a lot of R&D or something.

MR. MACDONALD: To look at addressing all the problems associated with this area, we have several efforts going on. And those principal efforts are, we have divided this area up into what we call operable units. And that basically was, we looked at categorizing the different types of waste in here that we need to deal with. We are looking at what we call source areas, which is where the waste is actually buried. We also have instances where waste has been released. So we are looking at several efforts going on simultaneously.

What will happen, if these processes don't work, you're right, what we have to do is either refine these, work on developing the in-situ, which at this point we are not sure is actually a viable process yet, ex-situ, perhaps and we are going to have to do -- there will have to be some development done.

What Fred is saying is that we would look at that point of postponing this action with Pit 9, and Pit

9 would be handled under a Record of Decision that we are going to have to do on all the rest of the pits and trenches out here that have americium and plutonium in them.

Under the Federal Facility Agreement, that Record of Decision is scheduled to be finalized in 1998. So what we would look at doing is target, then, to look at where the R&D needs to go so that we are ready at that point in 1998 when we are supposed to be dealing with all the rest of these pits and trenches scattered throughout the RWMC out here.

MR. HUGHES: Another way to look at it is, we are actually pulling Pit 9 out of TRU pits and trenches and moving it earlier than it normally would be considered so that we can learn from Pit 9 in order to treat the rest of the Subsurface Disposal Area. So we're actually trying to get ahead of the schedule.

MS. MESSENGER: You said that you, the public, have the power to change the preferred alternative. Why wasn't the public involved in choosing a preferred alternative? If we have the power to change it, why didn't we have the power to be involved in the first place?

MR. WADE: The process is set up that we define -- or we don't define, we identify alternatives. We then, based on what we know, identify what we believe is the preferred alternative. We then bring that out to the public. We did that a year ago. I recognize some of the faces. I know you were here. A lot of questions we got were, you are not telling us anything about physical separation/chemical extraction. As Mary Jane said, we have identified the treatment categories. We haven't told you what the treatment is.

So we got questions on, is this stuff really going to be safe to put into storage? A lot of the questions that rolled out of that are why we are out here again. We haven't made a decision to do anything, but to revise a proposed plan, to give you more specific information, to allow you to make a better decision, and for us to make a better decision.

In the last year we have gotten a lot more information and we've made it available to you. We have added components to our preferred alternative, which makes it safer and more protective. And now we are back out here getting more public comment.

MS. NEARMAN: If I could just clarify one thing. I think there is some confusion in that this Proof-of-Process -- because the Proof-of-Process is being conducted that this has been a selected alternative. It is very typical -- you folks sound like you are very knowledgeable about the process -- to do a treatability study as part of the RI/FS stage --

MR. NYGARD: Clarify your acronym.

MS. NEARMAN: During the Remedial Investigation/Feasibility Study -- when you are evaluating which alternative makes any sense at all, one of the things that we do is a treatability study. Now, as far as EPA is looking at it, we look at a Proof-of-Process as a treatability component to make sure that physical chemical stabilization is even a viable alternative. It in no way, in our minds, selects this as an alternative.

DR. KOLTS: Am I allowed to ask a question? Do you have an alternative that you would like considered? And if so, I would enjoy your input.

MS. MESSENGER: You have come up with Lockheed and Waste Management, and you said you had 18 different --

MS. NEARMAN: Requests for Proposals.

MR. WADE: Let me tell you briefly how the process works. There's a Commerce Business Daily, I guess, newsletter that is made nationwide. We put in that Commerce Business Daily basically a brief little ad that says, "We've got Pit 9. It's a mess out there. We need some help to clean it up. How many people are interested?" From that, we got 18 responses from 18 different companies or teams of companies.

We then had two pretty big conferences. Before we issued the Request for Proposals we said, let's have a meeting, we will talk about it, we will work out details, and tell people what we are really looking for.

We then, last November, issued the Request for Proposals which said -- which provided in a lot more detail what the problem was and requested input back from companies as to how to clean up this problem.

MS. MESSENGER: When that came back in, the companies themselves suggested these?

MR. WADE: Yes.

MS. MESSENGER: Or you asked them, saying these are the alternatives that we have been looking at.

MR. WADE: No. We issued a Request for Proposal that said, here is Pit 9, here is the problem that is there with Pit 9, we request a proposal.

MS. NEARMAN: You also specified levels.

MR. WADE: Right. And we established the problem and our cleanup criteria.

DR. KOLTS: Digging it up and flying it to the moon.

MR. WADE: We did not limit the proposal in any way as to what we expected.

MR. HUGHES: Before we got the proposals back, none of the teams has said this is what we are going to propose to you. They don't do that. They gather information from us on what the problem is. And then the three teams that actually submitted the proposals, that is the first time we saw what private industry was proposing.

MS. MESSENGER: Then you guys got together for five weeks, whatever it was, in seclusion?

MR. HUGHES: That was the procurement.

MR. WADE: EG&G did that, yes.

MR. MACDONALD: Those proposals, it's not like we've got five sheets of paper. They are detailed proposals that if you stacked it up on the floor, three-ring binders, knee deep high.

MR. WADE: To kind of stress the point that they didn't come in because originally we had physical separation/chemical extraction. The Lockheed process, that thermal treatment, is kind of -- and John, correct me if I am wrong -- but it's an ex-situ vitrification.

They proposed to add the third component or the third alternative onto the fourth alternative of what we had a year ago. We came back out, we looked at the proposal, we looked at what we would have got out of it, and determined that was indeed the right decision to make. We added the stabilization process. And now are out here for public comment.

MR. SIMON: I am Craig Simon. I am just confused on the mechanics of putting together the alternatives. And the EPA and others sat down over a period and put together temporary feasible processes from no action to stabilization to sending stuff to the moon. Did you prioritize your list and come up with this number four and then send out your bid to the industry, you know? Was this your preferred method? And then they put a bid together based on your preferred method?

MR. WADE: There is a couple of questions in there. The first one is, the first part you described is accurate. We went through and the alternative -- the evaluation of alternatives is in the proposed plan. There are several modifying criteria that -- how you evaluate long-term effectiveness, short-term effectiveness, permanence, cost is part of it, and community acceptance. Those things are what we as the Agencies evaluated the alternatives against.

That had nothing to do with the Request for Proposal process. If somebody would have come back with a process that we didn't know about -- again, this is what we knew about from reports, from processes that are out there already on the table. We made our decision based on the best that is out there in our minds.

What we got back in the way of proposals was independent of the CERCLA process. They could have proposed anything they wanted to. Now -- and I lost my train of thought.

DR. KOLTS: In fact, last year the preferred alternative was physical separation/chemical extraction. When the proposals came in, it didn't fit. I mean, it's part of the reason we're here, is what they proposed had stabilization in it.

MS. NEARMAN: When we were evaluating with the alternatives, with the radionuclides there really isn't a lot you can do with them other than some form of stabilization or vitrification. So we were pretty limited in the number of alternatives that we could even list that met those criteria of treating those regular radionuclides.

When we went through the criteria that Jim was talking about as far as implementability and whether it was going to be able to provide long-term effectiveness, difficulties came up with in-situ vitrification and ex-situ vitrification because of the heterogenous. The waste is so many different kinds of wastes in there, the drums, the reactors, the pick-up beds. And if you put the electrodes into the ground or use some sort of an ex-situ vitrification, you wouldn't necessarily get a good solid mass that would really tie up those radionuclides or all of the contaminants.

The physical separation/chemical extraction then adds some processes to the -- up front so that you get a more refined waste stream that is going into that stabilization process, be it thermal or, as Waste Management is proposing, a chemical finding. But we needed that refined waste stream, it looked like, when we were evaluating the criteria to make that stabilization step more effective.

That is why alternative four in the treatment technology type that we looked at was our preferred alternative, because of its effectiveness. And complete removal and off-site storage was out of there for other reasons that -- costs and just implementability and it wasn't protective and didn't reduce the waste streams and that sort of thing. So that was our thought process as we were evaluating those alternatives.

MR. BJORNSEN: Which kind of comes back to -- I was at the last round of Pit 9, this sort of thing. I am beginning to wonder why I was. In other words, I almost feel like, okay, we contributed, we talked, we went over a lot of things. And then completely independent of that, these were sent out to -- or 18 companies requested further information, three responded. Now we have the alternatives, et cetera.

But the fact is that at some point prior to that, the public was involved. Then as I understand, these were sent out, alternatives were reprioritized, perhaps, or information came back from the people who ultimately will do the work. The question is or the comment I have here is that what were we doing the last time? And did we -- I mean, were we chasing our tails here? We are back here again. We have two, obviously very technical -- and not to discount the possibility that these are very, very good proposals, but the fact is I am wondering, what are we doing here, why are we doing this here and why did we do this last time?

It seems as though decisions are being made and the public is being brought in because it's required by CERCLA. Okay, we have handled our end of it. Thank you, good-bye. And now we are going to do what we planned on doing in the first place.

MR. MACDONALD: I am not sure I caught the question, if there is a question.

MR. BJORNSEN: Well, it's kind of a little bit of both. The fact is we have talked about in-situ vitrification before, we have talked about these alternatives. Was what went on during the last round of Pit 9 comment periods, this sort of thing, was any of that forwarded to these people? Were any of our comments, was any of the information that you gleaned from previous meetings on this? Or were these just sent out to the companies and now you're back saying, this is what we are going to do?

MR. MACDONALD: Those comments were not sent out to the companies, because the companies have no responsibility for ultimately deciding what should these alternatives be we proceed with. That's DOE, EPA and the state of Idaho are the Agencies who ultimately will need to make a decision about which alternative.

The Agencies took those comments, I believe, into account. That is one of the reasons we are back out here. We got proposals back that in fact were not what we had talked about being the processes, the alternatives that were discussed in the original proposed plan.

So we wanted to come back out and say -- and particularly one of the things that was asked was, we need more information about the processes you are talking about to be able to help make a reasonable choice. So we have tried to bring that information also out to talk in some detail about what we have gotten back about what alternatives, what processes we have available to use to remediate Pit 9. Those processes are within that alternative number four.

MS. NEARMAN: Speaking from EPA, and I'm sure Dean can speak for the State, we looked very carefully at the comments that were submitted around on the first round of public meetings. One of the comments that we received was, you should be considering stabilization much more thoroughly. That contributed, as well as the information that came in from the proposals for altering alternative four.

There was also other types of comments that were received about protectiveness of the cleanup levels that were being chosen and other types of things not necessarily just related to the alternatives evaluated that resulted in a pretty revised proposed plan. So speaking from EPA, we clearly considered those and tried to incorporate all of those comments into this revised proposed plan.

MR. WADE: The key point I would like to make is that no decision has been made yet on how to clean up Pit 9. We have made a decision to revise the proposed plan and come back out to the public.

We made a decision that's outside of that process to test these processes to see if they will work. The decision to use these processes on Pit 9, to use the preferred alternative on Pit 9, hasn't been made yet.

So we are doing things and we are making decisions to give us more information on how to proceed, but we haven't made the ultimate decision on what to do with Pit 9 yet. So I don't think we are jumping the gun. That is why we are out here again.

MR. BJORNSEN: That is why I asked, essentially. That it seemed as though decisions have already been made and we are going through the process of rather than getting public involvement, we are just doing what we have to do to involve the public because the law requires it.

I wonder sometimes what exactly the public's role really is in all of these, because it does have the feeling of a done deal here. That, gee, we've decided this is what we want to do and now we are going to figure out how to sell it to the public.

MR. NYGARD: Could I just respond to that a little bit? One of the problems that we always run into is just how much information do we put together to, one, allow the public to evaluate the alternatives. We understand that not everyone understands all the technical details.

So we go to great pains to put together proposed plans that provide enough information so that if you have the time to go through the proposed plan and you understand how we evaluate the alternatives, that is one thing. If you want still more information, go to the administrative record. We provide -- in some cases maybe we don't provide enough information. That was the case with the proposed plan last time. We felt that we needed to beef those sections up, especially with in-situ vitrification, and certainly on the alternative four as it was presented last year.

We go to extremes. I would say that on this plan here we probably have those extremes. We have the first time, maybe not enough was presented to the public, at least that is what we got back.

This time we have more information than we usually present in a proposed plan. So the difficult part for us is, we want to present the information, but when we present the information, it looks like more of a done deal. If we don't present anything at all, it looks like we just made a decision and ran with it.

So it is difficult, but I just wanted you to understand that from our perspective, we wrestle with those same things too. It's difficult to do that. And so we try to come out here and be prepared.

The other thing that I would like to respond to was that there was a lot of concern about, well, when do the bidders know this and how did all this piece together and what information was traded back and forth and those kinds of things. From my perspective, having gone to the pre-bid conference which was over a year ago, those people in that room, the bidders who were anticipating putting together these detailed proposals and spending quite a bit of money, they were looking at it from the other perspective. Well, are we going to put all this money out here only to find out that the Agencies and the public aren't going to like this thing, are we just eating all the costs? There's a roomful of those people just like you looking at it from the other angle. Their jobs were at stake, I am sure of that, by taking on something this extensive, so that is just some of my thoughts on this over the past year.

MR. BJORNSEN: I think that pretty much answers what I was getting at. But certainly I hope you understand my concerns.

MS. JORGENSON: I have a question about costs. In the table on page ten you have one amount, but somebody keeps mentioning investing eight million dollars, and I don't understand the connection.

MR. HUGHES: On that table, if you look on the top line it says treatability, subtotal, you go under physical separation/chemical extraction, sixteen million dollars. That is the eight million dollars for each team that they will pay if they pass. That is the eight million that we are talking about.

MR. RAGAN: I just want to comment that from what I recall from the meetings last year, it was rather vague, and you've got a big thick manual that probably a nuclear scientist couldn't read, and you're going, "Holy Toledo." And I think I recall from that that it was just identification of which sites had to be cleaned up, Pit 9 being the one that they were going after the most, being Superfund. And I find that this one is, to me, a lot more informative than the one last year, just to back up what you were saying.

I attended the one in Idaho Falls and it's like night and day to me. And it does seem -- just to back up what you are saying -- from what I recall, last year it was really difficult because you didn't get the proper documents and you couldn't make a comment unless you were a nuclear scientist yourself because a lot of the information was very scientific and this year it seems a lot easier to understand.

MR. TAYLOR: That chart back there, which is an updated schedule I was told before the meeting started, is that budget driven or technology driven?

MR. MACDONALD: What you see back there -- and, Reuel, correct me if I'm wrong, wherever you are -- that should be the schedule, the enforceable schedules that are in the Federal Facility Agreement and Consent Order, the schedules that DOE has to meet to be in compliance with that agreement and in compliance with the law.

Those schedules were developed -- we tried to develop resource-loaded schedules, understanding that we wanted to try -- we didn't think we were going to get a whole big whopping sum of money all at once, but to plan the work over a reasonable period, and budget was a factor in that. And budget will control what happens ultimately. Budget will control whether or not that gets met or --

MS. NEARMAN: But you also have the statutory mandate for initiating continuous on-site physical remedial action -- how is that for a string of statute language -- within 15 months of reaching the decision. So they do have a statutory mandate for when they have to start.

MS. COOKE: Back to what I was asking about earlier, sorry. I am very concerned about how much has been decided here. You know, basically one of these two proposals is calling for incineration. And, you know, if I were to see tomorrow that INEL was proposing to build an incinerator, I would expect a full-blown EIS, the whole environmental statement process, public review and everything, and a decision just on that, on whether or not there should be an incinerator out there. That is not the only part of this. That is why I am thinking outright here.

I guess what I would like to hear, which might help me here, is let's just say after you go through all your hearings all over the state, it's clear that the public goes with number four, so that will reaffirm what you are all thinking and you will go back with number four in your pocket.

Please explain to me how the public will be involved from here on out in this decision and in the Record of Decision and monitoring the work being done, and, you know -- you understand my concern? I am not really crazy about you building another incinerator at INEL, but that's going to happen out there and there isn't any conversation about that. There's one word in here. And this is all -- yes, I can go read the administrative document, but that is a big deal.

And any other time out of this particular picture and this interim action and that kind of thing, we would be having a full-blown hearing just on the profit of building an incinerator, for example. Maybe I will feel better if you tell me that the public is going to be involved in seeing how this thing goes and how you are going to make your decisions all the way through here.

MR. MACDONALD: We are trying to get the public involved tonight to decide which of these alternatives ought to be considered.

MS. COOKE: If you will take my theoretical idea that we all say, well, we all think you should go ahead and try four, then what?

MR. MACDONALD: We would proceed with going forward with the project as outlined, see if the process will in fact work.

MS. COOKE: How is the public involved?

MR. MACDONALD: We are involving the public tonight, we would keep the public updated on the status of that project throughout the life of the project.

MS. COOKE: How would you do that?

MR. MACDONALD: There are several different ways. There is a Site-Specific Plan that comes out every year that talks about projects ongoing and planned projects at the INEL. There is other means for communicating with the public. We have got the INEL Reporter for statusing people with what is going on with various projects.

We routinely have -- or are planning to have, I believe it's two informational meetings every year on the environmental restoration program. Am I missing anything? Is that two, Reuel?

MR. SMITH: That's correct. We are updating the

Community Relations Plan. There will be a discussion of the activities for public involvement during the remedial design phase and there will be semi-annual briefings to let people know what is going on, not only with this project, but with other projects in the other meetings that you have attended over the past year and a half, there will be briefings to let everyone know what the status is on those projects.

MS. COOKE: Tell me how you deal with this when you are within your recommendations or considerations about how to clean up something, we're actually embracing, doing something that has significant environmental impact on its own. I am just a little concerned that we are going into the decision, some greater decision, and it's not being looked at.

MR. WADE: We have to do NEPA for this project. NEPA being National Environmental Policy Act. We have to do NEPA for this project. Currently right now we've got an environmental assessment that is back in Washington being reviewed.

MS. COOKE: On what?

MR. WADE: On the Pit 9 process, on the identification of alternative four being the preferred alternative.

Now, from an environmental assessment, you get one of two things. You either get a finding of no significant impact or you get -- the decision is made to proceed on to an environmental impact statement. That decision hasn't been made yet because, number one, again the document is still being reviewed, it hasn't been sent to the State for a State review yet.

Number two, we have not made the decision to proceed yet. Once the decision is made to use this, to use one of these two processes, then we will have to go back and look at our NEPA documentation and determine, was it adequate enough and did it cover all the questions that you are raising now.

NEPA will be done and it will be done to meet the questions that you are asking. That is not part -- we didn't go into that level of detail for the proposed plan for the interim action.

MS. COOKE: Let me say -- and then I'll shut up for at least a minute -- that I don't feel that I know enough about the treatment plants. And that information has not been released to the public. So I can go read all the administrative documents I want, but a lot of the information that I would need is not readily available.

I am concerned that you are asking people to tell you what they think. I mean, to be honest with you folks, I think I am being patronized, because you want me to tell you to go ahead with number four, well, gosh, from what I know now, fine, go ahead with number four.

But, by the way, don't build an incinerator, okay, because I don't know too much about that, and I don't think I like it, and if you can do that, then maybe we're okay. That is basically what I feel I'm making a decision on.

DR. KOLTS: Why haven't you asked more technical questions?

MS. COOKE: Tonight?

DR. KOLTS: Right now. You stated that you wanted more information on these processes, that you felt like you have been patronized because you didn't have the data. Why aren't you asking the questions?

MS. MESSENGER: What am I doing in here?

DR. KOLTS: Ask about the processes --

MR. MACDONALD: If you have got some more questions about that, I encourage you to ask them.

MS. COOKE: I won't tonight because that is somewhat rude of me. What I would like to know is, and I am not hearing, is there going to be any other time that the public signs off on this or is this it? I am not asking about, are you going to send out documents or is it going to be part of the Site-Specific Plan or an ongoing thing. Is this it?

MR. MACDONALD: For this action?

MS. COOKE: Yes.

MR. MACDONALD: That is why we are here.

MS. COOKE: And that's it. All the way through the entire process to TRU storage, basically this is it?

MR. MACDONALD: Yes.

MR. NYGARD: In terms of actually a decision point, you go to a Record of Decision, develop the design process, the Agencies approve those design plans as we agree to, and we develop the design and remedial action scope of work and we proceed.

Our role in that is to ensure that Energy complies with the Record of Decision that has been signed by the director. So, yes, I would be quite candid with you, yes, there is not a process in law built in post-design or after the Record of Decision that says these are points at which you get a body of individuals together from the community and we say, do we continue to comply, make a decision as to whether or not we can continue to comply with the Record of Decision, which is in fact a legally binding agreement? Now, that is the cold side. That is the cold, hard, crass side, letter of the law side.

If you want to look at, will we be available to answer your questions as to why we said the

Proof-of-Process test was performed adequately, these are the kinds of things that were evaluated, this is why we still feel the remedy is protected with human health and environment, these are the monitoring systems in place, these were things that were done, an explanation of what that all means, we can do that. At least from the State's perspective. I won't commit Energy or EPA.

But I think it's certainly in our best interests if people are concerned, just as we have scheduled technical briefings on many of these proposed plans in which any member of the community can call up, if they have a group of people, get on a conference call and explain this proposed plan and what that means. Later on, you have questions that relate to where we are at in this process, yes, but it is not a voting process.

MS. NEARMAN: One of the other ways that we get some level of protection is in the Record of Decision. The performance standards that DOE is committed to, and EPA and the State look very carefully at, is the short-term effectiveness. I think that gets at some of the NEPA types of things.

If they are not able to demonstrate that they are able to perform whichever the selected alternative is in a manner that provides protection to the environment and to the human health as well as the workers, based on the ten to the minus six levels that are in the NCP, they can't go ahead with it. That is something that they commit to in the Record of Decision. So I don't know if that gives you any more level of comfort, but. . . .

MR. BJORNSEN: Would you have to go to the State, per se, for an air quality permit for the gas scrubbers?

MS. NEARMAN: They have to meet the substantive permit requirements, all of the -- except for filling out the actual paper -- all of the substantive permit requirements, yes, they have to meet those.

MR. BJORNSEN: But they don't have to actually get the permit? All they have to do is meet the requirements?

MS. NEARMAN: Meet all the requirements that you would normally have to meet, yes.

MR. NYGARD: But the requirements are built into the design. And the same people that review air quality permits in the State, same engineers, same people, will be the same people that will be reviewing this design.

If that design is inadequate, the State and EPA have options open to them to pursue those issues to dispute resolution as is outlined in the Federal Facility Agreement, and I know you are familiar with that document. That is how that process works.

So it's not like DOE comes in, says, we comply, here it is, and run out there, build this thing, do whatever they want, scot-free. It's not like that. It's just what we have done is, we have structured the cleanup program so that we can encompass all of these things into one agreement and the work gets done. Otherwise we would be looking at getting air permits and the process there would take a long time.

MR. BJORNSEN: Normally that would be, again, would come back to the public process where we would be allowed to comment on an air quality permit for, say, filtration or scrubbers or incinerators or whatever, whereas in this situation, even if all those are met, the public does not have the opportunity that they would with a normal permitting process?

MR. NYGARD: That's correct.

MR. USHMAN: Since this is my last time to speak on this subject, out of the five, four is basically the only feasible way to go, with the exception of the thermal treatment center there. And then I, again, have a lot of problems with an incinerator being constructed out there to handle this since the technology basically does not exist in order to handle any radionuclides going up a stack, as well as most heavy metal.

The most they can do current day with their scrubbers is 99.9999. And that doesn't achieve it. I think as far as acceptable levels are concerned, there should basically be zero release on any man-made radionuclides or any more heavy metal being emitted into the air.

You can say what you want to and EPA can say what they want to, but we don't have incinerators that function. And I did mention incinerators at one time, but I also meant computer-operated, mentioned those, that they should be interconnected with computers and monitored by the State, not by the INEL or DOE or anyone. And they should be monitored basically 24 hours a day, if you so construct one.

Because with all incinerators, what happens is come nighttime, they shut them down. They shut the scrubbers down to save money. We have to protect ourselves from this, so they have to be computerized.

We can't have the type of incineration that we have today, which the technology is not out there. You can go anywhere in Idaho and you can look at all the manufacturers around here, and every one is violating air standards, and they all have scrubbers. They are antiquated. So the State here needs to update themselves too and get with their air quality around here.

Anyway, I will have to go with number four since this is the last time we can comment on it, but I still think we are going to have trouble with either one, either the special drying or thermal treatment. Any way you look at both plans, they are going to have a lot of air emissions there. This is going to be the basic problem. Thank you.

MR. TAYLOR: This is kind of addressed to the Snake River Alliance folks today that come to every one of these meetings and I have no ax to grind with them. But I would like them to know I am as concerned that the public have the right to speak as they are. But I will be damned if I want them making technical decisions for me, unless they are technically qualified.

I have worked in the program 17 years. I worked at INEL for four. And I am very concerned about what has happened in the last 50 years with cover-ups and this sort of thing. So I come to these meetings because of the cleanup.

You people are getting a start -- I don't think you're crooks up here. And these folks seem to be knee-jerk against everything you are doing without coming up with a plan of their own. I think it is very good to have the public involvement, but I don't want to make those technical decisions, and I don't think they are qualified. I think that a line should be drawn and they should come back into some zone of reasonableness and moderation in their remarks.

MR. MACDONALD: It sounds like -- I think maybe we have exhausted the questions, unless you have got a question, and we ought to take a break and then go ahead and take formal comments. Do any folks have questions?

MS. SHEPPHERD: I am Kim Sheppherd and I wanted to know who decides what plan goes through?

MR. MACDONALD: It will end up being the Department of Energy, the Environmental Protection Agency, and the Idaho Department of Health and Welfare.

MS. HARRIS: Hypothetically, if Lockheed were to be awarded the contract, would they be the ones who would build all the buildings out there to take care of all these treatments?

MR. HUGHES: Yes, ma'am. In either case the contractors are responsible for erecting the buildings, erecting the processes, doing the work, and then taking their processes and their building away after it's over.

MS. HARRIS: So they wouldn't just leave them there and turn them over to INEL?

MR. HUGHES: No.

MS. MESSENGER: Can I just make one rhetorical statement that has something to do with what was just said here recently?

MR. MACDONALD: Let's take a break. And unless there's questions, if there are questions, we will continue with the questions. If you folks have comments, then we will come back and we will take comments. I think we have had some comments here and if they want to make them as formal comments, I want to be sure we get them on the record.

AUDIENCE: I was just wondering, have either one of these operations been rejected before or are these experimental?

MR. HUGHES: What I forgot to mention was that the individual things have been proven elsewhere. Lockheed has done it throughout the U.S. and the world. Waste Management has got experience on each individual unit process. What we are asking them to do in this first phase is to put it together.

AUDIENCE: We can't hear you.

MR. HUGHES: The individual steps have been used throughout the United States and the world. What we are asking them to do is put the steps together on Pit 9-like material. That has not been done before. So that is what we are asking them to do in this first phase. They have to demonstrate their knowledge.

MR. MACDONALD: If it doesn't work, we don't pay.

MR. LEONARD: My name is Paul Leonard. Going on what this gentleman said here, I would like to ask the Idaho state representative, there has been a claim made that a lot of Idaho businesses are violating the Clean Air Standards now, due to antiquated equipment. If so, what is Idaho state doing about that? And if that is the case, what will Idaho state do about any incinerator built on INEL?

MR. NYGARD: Actually, I saw someone from our air quality section here. He left early. So I can't answer your question regarding the compliance of various Idaho industries. I can tell you who to call if you want to talk during the break.

As far as this operation and how this works, this operation will be conducted under the Federal Facility Agreement and Consent Order in compliance with the law as it exists at that time. And that is within the section. And we will have an operation maintenance plan in place that specifies what compliance is, what exceedences are. And that is how we will oversee the operation.

In fact, we have more people on this project overseeing this effort here at INEL than we do on many, many projects throughout the state. We received a grant from the Department of Energy to oversee our activities and that's paid for our activities. And that is part of the agreement. It's also required by federal law that potential responsible parties are responsible parties to reimburse the State and EPA for their oversight at Superfund sites, so there is a basis for that. So that is where we are coming from. We have got people to do the job and we will have a plan in place to do that, just like we have on the other cleanup projects that we are doing right now.

MR. MACDONALD: Let's take a fifteen-minute break and we will come back with comments.

(Recess taken.)

MR. MACDONALD: At this point what we want to do is take formal comments from anybody who -- it looks like we lost several -- who is left who would like to make a comment, and we will address these comments in the Responsiveness Summary that accompanies the Record of Decision, that is a part of that route.

Again, I want to emphasize, you can make a verbal comment tonight, either standing up in the audience, we will recognize you -- tonight for purposes of verbal comments, we would like to keep those to five minutes. Everybody can and I would encourage you to make written comments. We will accept those written comments through the 21st of November, as I said. People who might not want to stand up and give a comment in front of the group, perhaps, we have a tape recorder back here that you can go back and give that comment. We will let you do that back there by yourself into the tape machine.

Again, we have a court reporter up here. If you have a comment, I would ask that you identify yourself, just your name, so that she can get that name and we can identify that way who the commentor was. That will be in the record. And I am rambling. I do want to make sure that people again understand, the entire transcript of this meeting tonight will be in those Information Repositories. With that, anybody wishing to make a verbal comment tonight?

MR. BJORNSEN: Fritz Bjornsen, Boise. First of all, I would like to thank everybody who has showed up to give us this presentation. It has certainly been enlightening. I think it creates as many questions in some respects as it answers. But I did have a few specific comments.

One would be on the -- or things I would like to see addressed, would be on the return of materials back to Pit 9, that the materials returned back to Pit 9, what criteria these materials would fall under when they are returned, whether or not these materials are basically sanitized and no longer contain any wastes of any sort, whether or not what levels of waste or radioactivity chemical wastes, this sort of thing, is acceptable for return to Pit 9. I think this should be spelled out as to what exactly is going to be returned and what the character of that waste will be.

Certainly, I would want the Record of Decision and the process to identify the storage of the TRU wastes that are extracted from this process. In reading the revised proposed plan, I didn't get a real good feeling for how much radioactivity is actually there. There are comments, and I believe it was in here on page four, where certain assumptions were made initially as to the risks and also the, oh, physical conditions at Pit 9. And, apparently, that the sampling has determined that it was different than what was previously mentioned. I am curious again as to just exactly what we have got there, how much radioactivity specifically is there, and how much will be extracted out of all of this.

One concern I had also was with respect -- from a labor point of view, again, it talks about the workers that will actually be doing the cleanup there. What qualifications these people will have, what actually -- apparently some people will be coming in, some people will be employed from the surrounding area. Certainly, I would want to encourage the Department of Energy and their contractors to use as much of the local labor force as possible so as to reduce the impacts of bringing in people.

Now, it states here that sufficient housing, schools and other public services are available and there would be no significant impacts. Well, I would hope that that would be true. But I would certainly encourage the Department to bring in local people where possible.

Lastly, I guess, and this is kind of to reiterate some of the comments that were made earlier during the question and answer period, the question of whether or not some of these processes are going to require further public action.

I would like to encourage the Department to look at the construction of the facilities that are being built and determine whether or not environmental impact statements will be necessary, particularly with respect to the incinerators, other technologies, air quality permits, whether or not they should be made part of the public process.

Certainly if there is the potential of release, airborne or otherwise, of radionuclides or other hazardous materials, that that should be addressed in a public forum at the time that we get to that part of the process. That we should recognize that certain things are going to happen out there as part of this cleanup that may themselves produce other environmental problems.

That any time you even touch the waste that is there, you are running a risk. And I think that we need to minimize those risks and I think the public should be apprised of those risks. And I think certainly the environmental impact process is a good way to do that.

I would hope that whether or not it's required by this process that the public continue to be involved in some meaningful manner in this process, that rather than we buy off on it now and trust the powers to be to make it right, that we continue to be involved throughout the entire process.

MR. MACDONALD: Anybody else wish to say anything?

MS. COOKE: Kerry Cooke. I want to say that I really appreciate the presentation tonight. And compared to the very first meetings we got on this, where I think everyone from presenters to the public were kind of confused about what we were all trying to do, I think that your charts -- I guess for me, this is a very good way to present information. I like the fact that you can keep going back to them. It's not like overheads or slides that you see them once and they are gone. So I really appreciate that.

I also appreciate the verbal presentation. I think you have obviously given it a lot of thought in trying to make some technical information understandable to the public and I appreciate that.

I would like to -- I am going to hit -- and I will try to very briefly -- on the three things that I asked questions about. Basically I have to say that most of the answers to my questions lead me to greater concerns rather than lessening them.

I am concerned that the preferred alternative really does seem to be very complicated, two very complicated proposals that have different technologies all the way through it that could make it sink or swim, and that these should be separated out and looked at in a much more separate process. You are really looking at two alternatives, not one. And I think that the public should be involved in looking at that. And I think it's really unfortunate they won't be.

I appreciate that you are obeying the letter of the law, but I think that -- I give you a very well meant warning that I think you better do better than that for the public. We all have to remember that the only reason any of this is going forward is because the public of Idaho and the public of the United States decided that this was a problem and decided it was worth it to spend millions of dollars to clean this up.

And if anything happens to lose the interest of the public, if they decide that this is something they don't want to fund, it doesn't matter if they think plutonium underground is a bad thing and it doesn't matter if you think you've got the technology that's going to work. If you can't get the funding for it, you are out of business.

If you don't involve the public in a whole lot of checkpoints in this process, I think you are going to end up within a very short time without anything to work with and without the funding. And Congress is going to be spending money on getting banks out of jeopardy or something and they are not going to be giving you any money.

You know, I don't care how much you're obeying the letter of the law. The law doesn't do everything. At some point all three Agencies here need to go beyond the letter of the law and involve the public.

One important reason for that is something I had a question about, and that is, it's clear that some of the actions that you could be taking to clean up the environment could have negative impacts on the environment themselves. And I don't think anybody in the

United States ever said clean up the mess by making a mess.

Now, you are going to be needing to use some dangerous materials and using some processes that have risks. That is a fact. But I don't think the public has ever said to you, we want you to go off and decide that on your own and let us know if it works. And that is what you're about to do here.

I would just say again I think that this needs -- some of the stuff you are talking about here does need a full environmental impact statement. And be careful. I suggest you take all precautions possible.

So finally, I would like to submit some comments we just gave to the Department of Energy on the Site-Specific Plan they came out with. I would like to have them entered into this record also because they are very heartfelt strong, earnest recommendations that cleanup be complemented with a very strong site advisory board.

And we spell out in it exactly what we think the makeup of the board should be and I won't read it -- you will all be happy to know -- and exactly what their powers would be. It would not replace what you are doing here tonight and it would not replace, obviously, anything that was legally required. It would complement it. I think it would make this entire process more publicly accessible and therefore, more publicly acceptable.

I strongly encourage you to please consider adding a heavier dose of public involvement, and that means all kinds of public now. Don't let this thing go any further and don't get yourself in further jeopardy of losing the interest and support of the people who will pay to have this work done. Thank you.

MR. MACDONALD: Anybody else?

MR. USHMAN: Mike Ushman. I would like to have added into this comment on what I had previously so stated. And for two years now we have been working basically on these five solutions here. And the No Action plan we know, as far as I am concerned, is unacceptable. Something has to be done, which I think we all agree on.

The In-Situ Vitrification, your own technology has proven that it would be moisture content and everything. We could have more problems and air pollution problems and so on and so forth, expulsion by water trapped in between the barrels or in the barrels, or what have you.

And the Ex-Situ Vitrification had some possibilities where it can be put up and monitored and the proper amount of components added to it in order to encapsulate it into a high temperature pyrex-type glass in order for long-term storage.

The Complete Removal, Storage, and Off-Site Disposal is one thing that may or may not come about in the future. It's not available right now. So if we have to make a decision this year in order to get funding, it's probably one of the main things I would like to see done, but it's not going to happen.

As I said before, the Physical Separation/ Chemical Extraction is something we talked about two years ago, the old mining techniques of separating it, isolating it, and containing it. I like both plans, but both plans do have some drawbacks. But as you so stated, it's just a plan. So far it's not proven to be a viable plan, because the technology is there, but it isn't there for this type of transuranic waste and other materials that are in Pit 9.

It's going to be interesting to watch this unfold to see just how they come about controlling the air pollution problem that is bound to happen here and what the State intends to do with the air monitoring of it. So I guess I'm going to take a wait-and-see attitude to see how both of these outfits turn out, what their plans are, what they come up with.

I hope the EPA gets a little more involved in this here. And I also hope our current president will elevate them up to a level where they have some authority, other than no authority at all, other than to just be in the audience and talk. So that is about it. Thank you.

MR. MACDONALD: Thanks. Anybody else? Okay.

Thank you all very much for coming. You will be hearing more from us, I am sure. As was mentioned earlier, we are looking at a Record of Decision sometime in the spring.

(Hearing concluded at 9:15 p.m.)

REPORTER'S CERTIFICATE

STATE OF IDAHO)
) ss.
County of Ada)

I, CHRISTIE L. GARCIA, CSR, a Notary Public in and for the State of Idaho, do hereby certify:

That said hearing was taken down by me in shorthand at the time and place therein named and thereafter reduced to computer type, and that the foregoing transcript contains a full, true and verbatim record of the said hearing.

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 2 day of December, 1992.

Christie Garcia
CHRISTIE L. GARCIA, CSR
Notary Public in and for
the State of Idaho

My Commission Expires 12/16/93

IDAHO NATIONAL ENGINEERING LABORATORY

ENVIRONMENTAL RESTORATION PROGRAM

IN THE MATTER OF:	)	
	)	TRANSCRIPT OF
REVISED PROPOSED PLAN FOR A	)	PUBLIC HEARING
CLEANUP OF PIT 9 AT THE	)	
RADIOACTIVE WASTE MANAGEMENT	)	
COMPLEX, INEL.	)	

Public hearing on the revised proposed plan for a cleanup of Pit 9 at the Radioactive Waste Management Complex, INEL, on November 5, 1992, at the Howard Johnson Motor Lodge, Butte Room, Pocatello, Idaho.

ORIGINAL

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A P P E A R A N C E S

PANEL MEMBERS:	DON MACDONALD, DOE-ID Manager, Buried Waste Program
	JIM WADE, DOE-ID Pit 9 Project Manager
	FRED HUGHES, EG&G Pit 9 Project Manager
AGENCY REPRESENTATIVES:	DEAN NYGARD Idaho Department of Health and Welfare
	EARL LIVERMAN Environmental Protection Agency
CONTRACTOR SUPPORT:	JOHN KOLTS, EG&G Technical Counsel to Pit 9 Project
	BOB NITSCHKE, EG&G Risk Analysis Manager
	REUEL SMITH, EG&G Community Relations Plan Coordinator

November 5, 1992 7:10 P.M.

P R O C E E D I N G S

MR. MACDONALD: My name is Don Macdonald. I'm acting as moderator for this meeting tonight. Excuse me tonight. I've got a bit of a head cold. So if I sound a little sniffly or cough, excuse me.

I'm the buried waste program manager for the Department of Energy, Idaho Field Office. I'm responsible for all the environment restoration activities that are going to go on at the RWMC at INEL. That includes the Pit 9 project we're here to discuss tonight.

The purpose of this meeting tonight is multifold. We want to be able to provide information to members of the public about the Pit 9 cleanup project, explain the proposed plan that has come out, answer any questions you may have about the proposed plan or the cleanup project, and allow members of the public to make formal verbal comment tonight. And you'll also have an opportunity if you want tonight to turn in written comments.

A formal comment period has commenced on the proposed plan. That comment period started on the 22nd of October. It's a thirty day comment period and would close on the 21st of November therefore. We'll accept written comments through that time, and, as I say, accept verbal comments tonight from those who want to do so and accept written comments.

For people who may just want to do written comments tonight, we've got -- there are some yellow sheets back over on the table as you came in the door. You can write them down on there. You can take this with you if you desire. Write them up at your leisure. If you look on the back of it, it's set up for mailing. All you have to do is fold over the sheet, staple it shut. It's got a bulk mail permit on it and an address so you can mail that back.

If you want to use -- if you're going to have more comments than are going to take up this sheet, the address to mail comments to, you can find that in the proposed plan.

I would like to introduce a few other people who are here tonight in support of the meeting. Right here on my immediate right is Mr. Jim Wade. Jim is the project manager for the Pit 9 project specifically for DOE-ID. Next to him is Mr. Fred Hughes, who is with EG&G and is the project manager for EG&G for Pit 9.

Behind us here we've got Mr. Dean Nygard, here representing Idaho Department of Health and Welfare. At this time if Dean wishes he can make whatever comments he would like.

MR. NYGARD: Sure. I'm with the Division of Environmental Quality. As many of you who have followed this process perhaps are aware, one of the reasons why we are here this evening is the state of Idaho last year entered into a Federal Facility Agreement and Consent Order to combine the state's hazardous waste laws and federal superfund laws into one comprehensive agreement to address past disposal practices at the INEL, which the Pit 9 is one of those.

We have worked jointly with DOE, actually with EPA as well in development of this proposed plan. It is a preferred alternative that we support. We have participated in this, as I've indicated, from the very beginning. We were out here, supported this preferred alternative last year with the initial proposed plan, and things have not -- our position has not changed since that time; although we feel that the information now that we have on Pit 9 makes the project all the more supportable.

I will be here all evening located right back here. If you have any questions about our involvement or participation in this, please feel free to ask. Thank you.

MR. MACDONALD: Thanks, Dean. Also here tonight representing the Environmental Protection Agency, Region Ten Office out of Seattle, Washington, is Mr. Earl Liverman. And, Earl, got anything to say?

MR. LIVERMAN: Good evening. My name is Earl Liverman. I am here on behalf of EPA. In my capacity here tonight I'm representing Mary Jane Nearman, who is the manager that's assigned to this specific project.

As Dean has indicated, we have worked closely with both DOE and the state in order to reach the preferred alternative that will be described to you tonight. I look forward to working with you tonight in answering any questions that you have. As I hope you all know, your involvement in this process is extremely important to all of us. It enables us to create a better product. And again we appreciate your being here, and we look forward to discussing with you any questions or concerns that you may have tonight. And also as Dean indicated, I will be here throughout the evening, and please feel free to speak with me as you desire. Thank you.

MR. MACDONALD: Thanks, Earl. Hopefully everybody picked up an agenda when you came in tonight. If you didn't and you want one again, they're back on the table. Raise your hand. I'm sure Reuel can help you out with that.

What we're going to do this evening is myself, Jim, and Fred will go through and explain the proposed plan, the preferred alternative, and try to give you information about -- in some bit of detail about what we're proposing to do at Pit 9.

Following that we'll have a question and answer session. People can either ask those questions verbally, or we have cards; and you can write your questions down and submit the cards, whichever is preferable to you all.

Following the questions and answers we'll take a brief break, ten minutes or so, and then come back to accept formal comment. That would be your opportunity to make whatever statements you want to make about the preferred alternative, about the cleanup. The only thing we would do as agency representatives is ask for any clarification if there is something we're not sure about, but that's your opportunity to make whatever statements you wish to make.

We do have a court reporter here this evening. She's here -- she will take a transcript of the entire meeting, the presentation, the questions and answers, and the formal comment period, formal comments. The transcript of this meeting will be made available and put in the information repositories.

Formal comments will be addressed in the responsiveness summary that's part of the record of decision. So for those of you who make formal comments tonight, we will address those comments in that responsiveness summary when the record of decision is drafted and issued.

And for people who wish to make comments, verbal comments, but might not want to stand up in front of a group, we do have an arrangement if you want to make some sort of verbal comment but don't want to stand up in front of the group we'll have a tape recorder over here. We can take that comment on the tape recorder. We try to work this several different ways to accommodate people's desires, preferences, phobias, et cetera. With that let me try to start this thing off.

The cleanup project of Pit 9 -- as I mentioned, most of you know Idaho National Engineering Laboratory is located here in southeastern Idaho. It's an eight hundred ninety square mile site owned by the Department of Energy and operated on behalf of DOE by several management and operating contractors, the principal one being EG&G Idaho.

Down here in the corner in the southwestern part of the INEL is the Radioactive Waste Management Complex. This is an aerial view of the Radioactive Waste Management Complex or, as the government is so fond of acronyms, RWMC.

This area was established back in 1952 for the disposal, shallow land disposal, of waste produced by operations at the INEL. That was principally low level waste and low level waste that was -- that may have been mixed with other types of waste that are now classified as hazardous waste. This was a standard practice back in the '50s and '60s.

Starting in 1954 the INEL began accepting waste that had been generated from production operations at the Rocky Flats plant in Colorado. Rocky Flats was involved in the milling and machining of plutonium parts for nuclear weapons. Those wastes were shipped to Idaho from 1950 to --

1954, excuse me, to 1970 and were disposed of in this area of the RWMC from this point on back to the back of the area here (indicating). This is referred to as the Subsurface Disposal Area.

The waste was disposed of in shallow pits and trenches that were dug into the superficial soils here. Pit 9 was one of those pits, and it's located here (indicating) up in the corner of the Subsurface Disposal Area. So this is kind of to orient you to where Pit 9 is, a brief background and history on the RWMC. To give you specifics on the proposed plan and talk about how the project came to be, I'll turn it over to Jim Wade at this point.

MR. WADE: Thanks, Don. Good evening, everybody. Thanks for coming. I'm going to jump into what we're doing and why we're doing it, briefly how we're going to do it. Fred is going to describe in more detail the technology we're going to use in the preferred alternative.

The first thing I want to hit on is why we are cleaning up Pit 9. We're performing an interim action as Don said under the guidance of -- as Dean referred to -- to clean up a site that poses a potential risk based on constituents that are in it -- plutonium, americium, and some of that hazardous material such as carbon tetrachloride and trichloroethylene that are degreasing agents or solvents used in the manufacturing processes at Rocky Flats.

With these materials in Pit 9 we want to clean them up and remove Pit 9 as a potential source of risk to human health and the environment.

The other reason we want to clean up Pit 9 is to take the first step in remediating or determining what remediation needs to be done at the entire Subsurface Disposal Area. Don mentioned we've got roughly an eighty-eight acre site here. We're taking the first step towards cleaning up the site by cleaning up Pit 9.

What is Pit 9 specifically? I kind of touched on it. Let me show you what's in Pit 9. Thanks, Don. This is a picture how waste -- Don mentioned that prior to 1970 it was accepted practice to dispose of waste in shallow land burial. These are some pictures on how that waste was disposed of in these pits.

The waste was containerized into drums and boxes and then either dumped randomly into the pit or stacked neatly like this. Then if you see boxes, there's boxes over here on the side.

Pit 9 contains roughly four thousand drums and two thousand boxes of waste. Again what's inside these drums is mostly plutonium and americium contaminated waste as well as hazardous material, solvents, and degreasing agents from the manufacturing process.

What's it look like inside the pit? This is a cross-sectional view of the pit. The practice was to dig down to the basalt layer, roughly eighteen to twenty feet down below the surface, place a layer of underburden or soil under there as a managing-type layer, stack or dump the waste in as from the previous pictures and mix -- and then when you covered the soil on top, the soil would move in and become -- interstitial is the word we use -- the soil mixed in between the containers of waste. Then a layer of overburden is placed on top to ensure that the waste and the workers at the -- other workers at the site don't come in contact with the waste.

This is a top view of the pit. From shipping -- Pit 9 was active between the years 1967 to 1969. We stopped burying waste in the RWMC or transuranic contaminated waste at the Radioactive Waste Management Complex in 1970. With Pit 9 being operated in those late years prior to discontinuing this practice we feel like we've got a good idea from shipping records and the inventory how the waste is situated within the pit and where it's at. That's what this chart here is showing us.

Rocky Flats waste is dispersed throughout the entire pit, but the majority of it is going to be down in this area. And then we've got reactor vessel parts located up here. And then degasifiers, shipping casks, empty pickup bed, trucks -- it's anything and everything that became contaminated was disposed of back in those days. There was no waste minimization or decontamination practices.

That's a history about what is Pit 9 and why we want to clean it up. Now I want to jump into how we clean it up.

UNIDENTIFIED: Pardon me, were there any liquids in the barrels?

MR. WADE: I can't say for sure. Most of the liquids were not -- if they were a liquid form, they were absorbed on to cleanup rags and absorbed into some kind of material.

UNIDENTIFIED: It was a polymer?

MR. WADE: No. Although -- the waste itself wasn't liquid waste. However, this pit did flood back in the '60s. So you might have seen a picture of what looked like a pond with floating drums and whatnot. If you've seen those pictures, that's because there's been several flooding events caused by the rapid snow melt with the ground frozen in the springtime, which caused a flood-type condition. There was no liquid waste placed in here. If you've seen those pictures, that's where that came from.

Alternatives evaluated, we as the agencies under the interim action process we say -- we identify the problem, i.e., Pit 9, and then we determine what's the best way to deal with that problem. We identified five alternatives to come up with the way to clean up the Pit 9 problem.

The first alternative is given to us. The interim action process identifies no action as an alternative that you have to consider as you're considering all alternatives. No action -- because this is an interim action, the no action alternative implies that we will do nothing at this time with Pit 9 except continue with our monitoring efforts and determine the final action or what we'll do with Pit 9 in the 1998 TRU pits and trenches record of decision, TRU being the transuranic -- TRU being the acronym for transuranic waste. So that's what no action means.

In-situ vitrification process -- I don't know if any of you got a chance to look at it, but we've got a little model up here that can do a whole lot better job showing you what it is than I can explain it. But what it does, it uses high voltage electricity with electrodes in the ground to create a high temperature and melt the material in place. So it's all done in the ground. You build a containment building over the top and melt it in place. It turns into an obsidian or a glass-type solid formation.

Ex-situ vitrification is a process similar to in-situ with the difference you have to excavate the waste from the ground and then put it into your vitrification unit.

Physical separation/chemical extraction/stabilization, Fred is going to explain those in a lot more detail in a few minutes. So I'll skip over that one with the exception of saying the difference between this proposed plan and the original proposed plan from a year ago was that we added the stabilization process, which we added because it will reduce the mobility of the waste that goes through the treatment process and thus make it safer for storage.

The fifth alternative evaluated was complete removal, storage, and off-site disposal, complete extracation of everything that's in the pit, repackaging and minor processing to get it into a suitable form for storage and then placed in long-term storage until an off-site disposal facility becomes available. Currently there is no disposal facility available for transuranic waste forms.

Okay. That pretty much discusses what is the pit, why are we cleaning it up, and how we're going to clean it up generally. I'm going to turn it over to Fred now, who is going to jump in with more details and more specifics on the preferred alternative. Fred.

MR. HUGHES: Thanks, Jim. One of the most common comments that we received during the earlier round of public hearings was how do you expect us to give you any reasonable sort of questions or comments on your preferred alternative in your proposed plan if you haven't told us anything about the technology you're considering for that alternative. So what I would like to do right now is go through how we went about selecting the technologies that are being considered under the preferred alternative, how the project is structured, then go into some detail about the two technologies.

The project structure -- and you'll see the technologies offer various features in order to do several things. First of all, we're interested in doing this job safely. We want to make sure that you the public are safe. We want to make sure the workers at the site and the workers on the project are safe. And lastly we want to make sure that the environment is protected.

Second of all, we want to use technologies that are proven. So you'll see as I go through how the project is structured that we go through various stages, and we have various checkpoints that have to be met before we go on to succeeding phases of the project.

Lastly, we want to do this job in a cost effective manner. We don't want to waste your money. So with that in mind the way we went about finding the technologies for the preferred alternative is we issued a request for proposal to private industry late last year. And right before we issued that request for proposal we got roughly eighteen teams of companies saying we're interested; send us the material. We sent it out. We got three proposals back from private industry, three teams.

The way we evaluated those proposals was we put together a source evaluation board. And that board consisted of experts in various fields -- radiological controls, chemistry, operations, production, mechanical engineering. The board took three proposals. They were sequestered away, and they reviewed them. They went on visits to each of the teams, asked questions, got answers. They evaluated the three proposals.

They evaluated them to see if the technology was feasible, that it made sense and that they thought it would work. They evaluated the proposals to see if the companies understood the complexity of the job and if they could in understanding that complexity actually go out and complete the job. And they also evaluated them based on the experience that the companies said they had in this area of work.

The board came back and said that of the three teams that submitted proposals one was judged not to be technically competitive, and they were removed from further consideration. The remaining two teams they said were judged essentially equal, and they said they should continue and be looked at. The two competitors left are Waste Management Environmental Services and Lockheed. And, as can you see, these are the corresponding companies that are in those teams.

One of the board's other recommendations was that they felt that the technologies offered by the two teams are the best in the world. You're not going to find anything better out there. But they said that these technologies have not been proven on pit nine-like materials. The components may have been -- have been proven throughout the United States and the world, but we need to make sure that they'll work on Pit 9 materials.

So what we did was we structured the project into three phases to try to achieve those goals that I mentioned earlier. The first phase is a proof of process test. In that phase both companies are going to test critical aspects of the processes that they proposed that we deem are necessary for them to be successful.

We have identified criteria that they have to meet. If they don't pass that criteria, they don't continue to the next phase. At the end of the first phase we evaluate both companies. We make a judgment as to which technology we think is the best. The technology that's selected will then go on to the second phase where it's a limited production test.

What I might add right here is this is one critical step in order for the project to continue. One of of the companies must be judged to have passed this proof of process test.

The other critical thing that has to happen for the project to go on is that you the public have to give us comments and tell us whether you think the preferred alternative is the best way or whether you think one of these other alternatives is better. So it's not like we're going full speed ahead without taking into account what you the public think.

UNIDENTIFIED: Did you just say there would be another round of public involvement after the proof of process test?

MR. HUGHES: No, I didn't say that.

UNIDENTIFIED: Okay.

MR. HUGHES: Assuming that the preferred alternative is still the chosen alternative and that we have at least one company that gets through the first gate, we go to the second phase. In this phase they erect the containment building over the pit. They erect their full-size equipment, and they demonstrate using substitute materials that the full-scale equipment will work before we will allow them to uncover a restricted amount of Pit 9 waste and demonstrate that they can actually clean up the waste in Pit 9 in a limited amount.

Assuming that they get through that and pass, then we give them permission to go to the final phase. So there are two checkpoints that we have to have the companies go through in order for them to be allowed to uncover the entire pit and clean up the waste.

To get into what each of the companies have proposed I'll start with Lockheed. And I hope everyone can see this. What you'll see is that overall what both companies propose for processes is pretty simple in nature. However, each of these blocks represent fifteen sub-blocks. So individually they are relatively complex.

The other thing you'll notice is that each of the companies -- their processes are broken into three main phases -- physical separation, treatment, and stabilization.

In Lockheed's case what they propose to do is at the dig face -- that's where in the pit as they uncover the waste -- it's at the point where waste is uncovered and they're actually starting to process the waste buried in Pit 9. So at the dig face what Lockheed proposes to do using robots and remote operated equipment is to separate the waste into waste streams, large items -- the reactor vessel Jim mentioned, nonsoils -- the sludges and the glass and the metals -- and then contaminated soil.

What they're going to do with the large items is leave them in place. If it's deemed that we have to decontaminate them, we'll do that inside the pit. They won't pick the vessel up, move it outside the pit, clean it and then return it to the pit. Nonsoil waste, the sludges and the glass, they'll transfer that material directly to the plasma arc melter. And this is nothing more than a three thousand degree Fahrenheit furnace, for lack of a better word.

The contaminated soil, what they are proposing to do is to send it through a chemical treatment process. During this phase what they're doing is they're trying to concentrate the TRU contaminated material and the other hazardous material into smaller and smaller volumes. What you'll see is along the way in each step they are testing for clean materials so that they can return material to the pit if it meets the criteria and constantly try and get the hazardous material down into more concentrated form and reduced volume.

In this treatment phase they do basically two things. They strip out the organics and send them to the melter. And they separate the soil by size. The small size soil, less than ten microns, is sent through a nitric acid bath where the plutonium and the americium is stripped off and sent directly to the melter. The clean soil is then stockpiled for return to the pit.

The larger soil greater than ten microns is sent directly to the melter. So you have these various waste streams going to the melter. By controlling the feed rate, by controlling the temperature they can control the formation of this iron rich basalt or obsidian that Jim mentioned for stabilization.

Any gases that are released are sent through an off-gas system where they're treated. The hazardous constituents in the gas are neutralized, monitored to make sure that any air that's -- any gases that are released to the atmosphere meet any of the requirements. The concentrated -- the stabilized material that contains the transuranic material is then placed into TRU storage.

In Waste Management's case you'll see they propose the same basic phases. Likewise at the dig face they separate the material into waste forms. Large items greater than two inches, primarily because their chemical system cannot handle material that's greater than two inches, then material that is less than two inches.

The other thing you'll see is that they are also sampling throughout their process to try and reduce the volume of hazardous material and to return as much clean material that meets the criteria to the pit as possible.

For large items like Lockheed they're going to decontaminate them in place. For greater than two inches material they shred that to reduce the size. They also decontaminate the material inside the pit.

For less than two inch material, which is the soils and sludges, they send that to a chemical process. In this case this is the heart of Waste Management's process. There are several things that they achieve in this area. The overall goal is to take the solid materials, your plutonium, your americium, your carbon tet, your nitrates and change them from solids to liquids.

What they're trying to do is get all the contaminated material from solid phase to the liquid phase. And they do that through various chemical processes. The liquids that contain these concentrated hazardous materials are then sent through an evaporation process where the materials are concentrated down even further. Any gases are also sent through an off-gas treatment system like Lockheed's, monitored, sampled, to ensure that the gas that's released to the atmosphere is safe.

The concentrated, dry hazardous material is then stabilized using drying techniques and chemical binding where they add chemical materials to bind the hazardous material to stable matrixes. And that's sent into storage. The solids that came out of the chemical process are tested to make sure they're clean and meet the criteria to return to the pit. Then they are stockpiled for return to the pit.

So the heart of Waste Management's is their chemical process. The heart of Lockheed's is their thermal process. What we're asking them to test in this first phase for Waste Management is this chemical process, this integrated process. We feel this is the area that we need to make sure works on Pit 9.

In Lockheed's case it's the thermal melter that we're requiring them to test. Don.

MR. MACDONALD: Okay. That takes you through the presentations on the alternatives and things. At this time we'll go ahead and open it up for questions. As I say, you can ask them verbally or write them down, whatever your preference might be. Yes, sir.

UNIDENTIFIED: The project phases, phase one, phase two, and it looks like they must pass the proof of process test to continue -- must be criteria for pass or not pass. I don't know what that is, but you've got two contractors here that are in contention. How are they remunerated for their participation in phase one, phase two, phase three?

MR. HUGHES: In phase one what we negotiated with both contractors is that they will use corporate funds to demonstrate their processes to meet the acceptance criteria. If they pass the POP -- if both of them pass, they will each be reimbursed eight million dollars. If they do not pass the proof of process test, they will not get paid. So they are betting their corporate funds that their processes are going to work.

UNIDENTIFIED: That's like a fixed price deal?

MR. HUGHES: Fixed price, lump sum.

UNIDENTIFIED: You make the POP test; you get eight million dollars?

MR. HUGHES: Yes. For the limited production test they erect a facility using their funds. They put in the full-scale equipment using their funds. They do the initial testing using their funds. And when they start to uncover the waste in Pit 9 and process that limited amount, we will have already negotiated unit prices for them. How much is it going to cost to process a barrel? How much is it going to cost to process a box? How much is it going to cost to process a cubic yard of dirt? So we will pay them for the amount of material that they process.

And then in the full scale those unit prices are still in effect, and that's how they get paid. If they process a couple hundred thousand cubic yards of dirt, they'll get paid so much. It's pretty much the risk is on the companies for the first phase and to a great deal during the second phase for them to perform.

UNIDENTIFIED: Eight million dollars each and if they pass phase one then they get -- so one of them is not going to -- one of them is going to lose after phase one?

MR. HUGHES: Right.

UNIDENTIFIED: One of them is not going to get eight million dollars?

MR. HUGHES: No. If they both pass, they both get eight million dollars each.

UNIDENTIFIED: Sixteen million dollars?

MR. HUGHES: Right.

UNIDENTIFIED: Okay.

MR. HUGHES: If they both fail, the government doesn't pay anything.

UNIDENTIFIED: But if those two pass then one of them is going to go on and the other one goes home?

MR. HUGHES: Yeah. We say thank you very much. We may use your process somewhere else. We may not. But here's your eight million. Thank you.

MR. MACDONALD: Just to add a note to that, what we're asking them to do in this proof of process test is not real simple.

UNIDENTIFIED: Well, I understand that.

MR. MACDONALD: We don't believe -- based on our analyses and based on what we've been told informally by these companies, eight million dollars is probably not going to cover their cost entirely. They have already invested a great deal of money in preparing proposals. I mean they may have invested up to something over one to two million dollars already, just the proposals, that they're into it.

So the eight million dollars is to cover what has been negotiated as an equitable settlement for the proof of process, but they're probably into it for more. The goal from our part is not to allow either company, whichever one ultimately proceeds through -- their profit really will be garnered from phase three from actual remediation of the pit. It's conceivable in phase two that they could go out there and spend much, much more than eight million dollars erecting the process buildings. And if they don't work at that point, they're into it for a lot of money. So -- over here next.

UNIDENTIFIED: You brought up a question I have. Suppose one or both of these people pass the POP test. Does this require DOE to enter into phase two with the best technology of these two, or is there a possibility that DOE based upon increased information regarding Pit 9 can say we'll pay you for your POP test, but right now we feel like it is not the time to do this and -- are we entering into a negotiation at this point that will lead to full production with whoever -- at least one who passes the POP test?

MR. WADE: The answer is no. We've got two separate processes here that are similar but different. The reason we're here tonight is to get public comment. If the agencies based on public comment and all of the evaluating criteria determine that the preferred alternative that we have is the alternative selected in the record of decision, then physical separation, chemical extraction, and stabilization based on that record of decision is how we'll clean up Pit 9.

Then we'll fall back and see. Because these companies fit this alternative, we'll see which one can do the job. If, based on public comment and the alternative evaluations, we don't select alternative four, we can pick any one of these. We can pick a combination. We can pick an alternative that's not listed that we've not identified now.

If that's the answer, then what we do is we continue the proof of process test because we'll determine what these industries or what these processes can do. We might be able to use them elsewhere. But we don't have to use these technologies on this process. We've got to do the CERCLA process to determine how we're going to clean up the pit. We're doing this in parallel because it's going to make things smoother.

UNIDENTIFIED: I understand.

MR. WADE: They're not tied together.

UNIDENTIFIED: So what you're saying, it's possible one or both of these people can pass the proof of process test, and you still say we've decided not to go with either one of them?

MR. WADE: That's right.

UNIDENTIFIED: We'll just pay you and you go home?

MR. WADE: That's right. Pay the eight million dollar fee that we negotiated. Thank you for your interest and your help, but we've got a different alternative now because that's what the CERCLA process identified for us.

UNIDENTIFIED: Okay.

MR. WADE: Beatrice.

MS. BRAILSFORD: When do you think phase one is going to begin?

MR. HUGHES: Phase one is right now anticipated to begin sometime later this month, first of next month. It will be a year-long phase. I might add that the -- in response to the one gentleman's earlier question where he said he didn't know what the criteria was, in phase one the companies are going to be evaluated on several things.

First of all, they have detailed criteria they have to meet. If they don't pass one of those criteria, they don't get paid.

The other thing they get evaluated against is schedule performance. They both laid out schedules for these proof of process tests. They're going to be evaluated on how well they do against their schedules. If they have a problem creep up, how well do they react to the problem? They're going to be evaluated on their management plan as to whether they understand the complexities of the Pit 9 project, how they propose to clean up -- do the latter stages. They're going to be evaluated on how well they go beyond the return to pit criteria, how far below ten nanocuries per gram do they achieve? How much above ninety percent volume reduction do they achieve?

And lastly they'll be graded on their waste form stability. How stable is it? Do the hazardous materials leach out? That sort of thing. So there's a whole slew of criteria these companies are betting their corporate funds on.

MR. MACDONALD: Roger.

MR. TURNER: How much volume of Pit 9 waste materials are they being asked to run through for the POP test in order to get a representative sample?

MR. MACDONALD: Why don't we --

MR. HUGHES: Let me introduce Dr. John Kolts. He's my technical adviser on the project. He'll be happy to answer your question.

DR. KOLTZ: During the POP test we're not going to use Pit 9 materials.

MR. TURNER: Well, that's what it says right there in phase --

DR. KOLTZ: No, no. It says we're going to demonstrate it on Pit 9 type materials. Let me clarify that for you.

Pit 9 materials are highly dangerous. There's a lot of plutonium there, a lot of hazardous materials.

The POP tests are not going to be done at the INEL. The POP tests are going to be done at the bidder's locations.

What we've done is we have gone back through the records at Rocky Flats, and I've also traveled to Rocky Flats and talked with workers there that actually made these sludges. We are having a chemical company duplicate the three main types of sludges that are in Rocky -- that are in Pit 9. Those are the oxide sludges, nitrate sludges, and the lubricating oil carbon tetrachloride sludges. They're going to be precipitated just the way they were precipitated at Rocky Flats. The difference is that we're going to load these sludges with cerium, uranium, and thorium as surrogates, as surrogates for plutonium.

MR. TURNER: Don't they have different chemical properties?

DR. KOLTZ: Let me keep going. If I lose you, tell me. That's what we're going to make to do -- I need to get back to these. So we're going to use surrogates that mimic the chemistry as best we can for plutonium and americium.

Now, in the thermal treatment in just this one process we're only going to use cerium. We're not going to use uranium and thorium. During the POP test and the chemical leach and the solvent extraction we're going to use all three -- cerium, uranium, thorium. In all these process we're going to use cerium, uranium, thorium. But what we're going to do up front -- these are pilot scale. These are hundreds of pounds per hour tests. Up front of that we're going to do laboratory tests where we actually use plutonium in the same sludge as we have uranium, thorium, and cerium. We're going to get what we call correlation coefficients. These are coefficients that say, yes, cerium doesn't behave exactly the same as plutonium, but it's point nine times it, or it's one point two times it.

And the reason we're using three types of surrogates in the chemical parts of it is because we mimic the different oxidation states. We mimic the different crystal structures. We mimic the different thermal stabilities. So we're trying to be very complete in the POP test, but we're trying not to generate mixed waste from the material. We're trying not to muck things up with highly dangerous plutonium. We're going to use depleted uranium.

MR. TURNER: What was the volume again? What's the volume requirements? How much are you having them go through?

DR. KOLTZ: On this one right here the minimum test is one hundred hours of melter operation under the schedule that will be run in Pit 9 at a minimum feed rate of three hundred pounds per hour. On this one (indicating), this series right here has to be run as an integrated system. This chemical extraction is based on trichloroethylene. What you don't see in here is clarification, filtration, some coagulation in the evaporation. It's all tied together.

So this is a -- not an individual set of processes. All of these processes have been used individually commercially. What we're asking them to do here is tie them altogether and operate them as if they were going to be operated in Pit 9. And, by the way, the gas scrubber and oxidation systems are considered to be an integral part of this test, both here and here (indicating). These systems will have to be shown to work. And Dean and the EPA are going have to buy off on their results that they're adequate.

MR. HUGHES: Yes, sir.

UNIDENTIFIED: Are you going to publish the pass/fail criteria for the testing and the data with respect to that?

DR. KOLTZ: I'm a technical guy. I can't answer. I'm sorry.

MR. MACDONALD: In terms of the pass/fail criteria or evaluation criteria -- we're not planning to publish those in the form of a report or something like that.

UNIDENTIFIED: I should think there would be simple statistics that you could publish that we could understand about the cleanliness of the process and how each of the competitors has performed with respect to it and the resulting -- for example, airborne contamination that we can expect in our valley.

MR. NYGARD: Can I take a shot?

MR. MACDONALD: Yeah. We'll end up with something here.

MR. NYGARD: From our perspective -- and I'll allow EPA to throw in their side -- of what happened -- oh, here it is. Here's what I would envision. Because of the number of factors, the health -- potential health impacts, potential environmental impacts, and another -- the cost of this project, it would seem to us at least at the end of the POP we're certainly going to have some pass/fail criteria developed up front as to what that's going to be, at least from our agency's perspective. And whether or not we go on to phase two is largely going to be dependent upon that POP.

So from our perspective, yes, there will be some pass/fail criteria. It's going to have to be very definitive, and certainly that would -- from our view would be a published document that would be part of the public record. Also I would say the similar thing would go along with respect to the limited production test. So there is going to to be pass/fail criteria, and from our perspective that would be made available in the appropriate documents.

MR. MACDONALD: Let me try to describe something going on. Dean's right. We need to -- we need to be able to communicate and show people what results have been. What we're going to have to watch out for -- both of these companies have spent a great deal of money up front I mean over the last number of years developing these processes. There are in fact proprietary pieces of these processes that -- that they're wanting to keep -- hold closely and that sort of thing.

We will -- in terms of publishing a lot of detailed data on the processes, I'm not sure if -- quite frankly I'm not sure what the answer to that may be if it's data that potentially discloses the proprietary nature of those processes. In terms of reducing that down to a statistical report that says here was the end result, it passed and it passed by X margin or something like that, I would think that's -- unless you think there is a difference.

DR. KOLTZ: No. I can tell you --

MR. MACDONALD: That's the dilemma we have.

DR. KOLTZ: I can tell you what I'm asking them to do. I can tell you exactly what the criteria are. I wrote what they're going to be judged on.

The dig face monitor has to be able to detect two hundred grams of plutonium in a volume the size of a fifty-five gallon drum at a depth of three feet with organic materials interspersed in that volume. And the reason for that is that if we have any more than that they start running it through the process and concentrating it -- if you end up with a whole bunch of those barrels all together, you can end up with things getting warm. We don't want things to get warm.

So -- but over here, for example, they're going to have to have -- I don't know the right term, but level three EPA certified traceable data that they have analyzed in their labs and also sent split samples to us in our labs, the full detailed data for the feed material and for everything that comes out of it.

For example, the gas that's going out to the atmosphere, they don't have pass/fail criteria in terms of the POP test, because frankly we don't have criteria from the agency that says you will be below this level. What we're going to do is we're going to provide them with the data that we can make a judgment call on.

Now, on the TRU storage, they have to meet the INEL waste acceptance criteria for TRU waste. If I'm not mistaken, that's -- that's in the administrative record. So, for example, it can only have so many grams of material at so many microns. And it can't be explosive and can't form vapors -- I forget all those things that are in there. They have to pass that.

This material has to be less than ten nanocuries per gram, and if they want to go on to the LPT test they have -- the farther they go below that the better they are judged. The clean material has to meet the land disposal restrictions for hazardous organics. Now, I would guess that all of the data that comes out of these output streams would be available.

Now, the part where it's proprietary, I'm going to have to know what this is right here (indicating). These folks have got millions and millions of dollars into developing these processes. Frankly, they don't want their process stolen. So data right here is going to be made available to me to judge how well the process is working. But that's proprietary data to their company, and it's stamped such. Whether that part is allowed to go out to the public, I would guess probably not. Yes.

UNIDENTIFIED: Is it available to the regulators?

MR. NYGARD: No, it's not.

DR. KOLTZ: I don't think so.

MR. NYGARD: Not at this point, no.

MR. MACDONALD: We haven't seen it at this point. I have to imagine that it will be available to the regulators.

UNIDENTIFIED: It will.

MR. MACDONALD: Yeah.

MR. HUGHES: The way we handle that is if the company says it's proprietary data, we always have the right to go back to them and say we want to use this data to talk to regulators. We want to use it to present it to you, the public. They'll say, yes, go ahead, or you can use this certain amount of data but not this. So we have the right to go back to the company and ask them to give us permission to use that data.

MR. NYGARD: Could I just add something to this. This is nothing new when we get into the regulatory arena and proprietary information. As a regulatory agency and having been a regulator for a number of years -- in my previous life before I started doing this activity, I worked on other projects with the industry where those were ongoing processes, and they contained proprietary processes.

So what we get into here -- it's a very fine line as well -- what is it that's necessary for environmental regulation to meet the requirements versus what are those processes that are very specific to creating a widget which has a patent which -- it's not necessary to understand the complete chemical process that's ongoing. What is very important is what's coming out of the end pipe, outflow. What is that material? So we get into those discussions and it's --

DR. KOLTZ: This is simple. For example, right here they would never be outside of a sealed pipe.

MR. MACDONALD: Let me leave it at this. That's a very valid question, and we will take it upon ourselves to determine exactly what kind of information we think will be releasable. And whatever that is we'll make sure it ends up getting -- is put in the information repositories, et cetera. So --

UNIDENTIFIED: I might be able to reach out a little bit ahead of you on this. My grandson is taking a mechanical engineering doctorate degree at Berkeley. With the group he is with is with this three thousand degree treatment of all kinds of elements, everything up to this three thousand degree point and what it does to them each along the states. So I would say that will probably be some of the wave of the future. Because he had a paper he wrote up, and he read it to an international symposium in Australia where he was taken and his expenses paid to be at this and be able to read the paper.

I would predict that that's going to be -- they're already doing some in the treatment of all kinds of wastes that we've had trouble with in the United States, and there's plants that are burning up these things. And that's probably one of the -- it's faster I imagine than the chemical treatment, because you've got to dissolve things in acid and then precipitate them out. It's tedious, but chemists are used to doing it.

So we'll get a comparison in the two processes, but Berkeley is ahead of probably anybody doing it. Might be worth asking about a little bit too.

MR. MACDONALD: Go ahead. This gentleman here.

MR. TURNER: I had a question about the process. I guess -- as I attended one of the other Pit 9 hearings about a year ago we were concerned about the overestimation of the risk to the RWMC workers that were posed. In this in new handout it states: the assumptions in the preliminary risk evaluation do not reflect physical conditions at Pit 9. And in fact it states here that the interim action will reduce potential for releases in the environment and ground water through treatment and/or containment of the contents of Pit 9.

Then I look at the Federal Facility Agreement. One of the first decision-making trees that you go through is to determine whether it's interim action or a normal track is -- question one is after the initial screening is the information adequate to select a remedy? If yes, it goes to the interim action. If no, it goes to data and through a normal RI/FS track.

You know, I'm not -- you know, I'm not -- I'm looking for early remediation too. But as I look at this fairly lengthy schedule in here, I guess my question that might be best posed to Dean is that to my mind I guess in your meeting about this decision and now that you've backed off the risk assessment and -- which is one of the drivers of the interim action -- now that you've backed off on the high risks and as I read these decision-making processes I guess -- I was wondering if you would just go over quickly how come we're still on an interim action process when as I read these decision-making questions it looks like we're still doing things like looking into the adequacy of selecting a remedy, determining adequacy of data as far as review and -- it says limited sampling needed for possible decision. These are the normal -- you know, the normal RI/FS tracks whereas we are still continuing on an interim action, looks to me like it.

MR. NYGARD: Sure. You're correct. We are on an interim action. Those previous steps that you referred to, that's a generic format to follow.

In some cases you have a site where we go out and collect actual data. In this case we had Rocky Flats inventory data. We had actual records of what went into Pit 9. So it wasn't necessary to go out and do a field sampling exercise because we have the information that tells us what's in the pit already. So, yes, we still are on an interim action. This is a revised proposed plan from last year. So for purposes of the interim action we still are at an interim action.

UNIDENTIFIED: Well, what would be the difference if we were on a regular RI/FS track?

UNIDENTIFIED: Why aren't you doing this seven years earlier?

MR. MACDONALD: What we've got -- another thing on -- with regards to interim actions, we were talking about the sufficiency of data to support the decision for an interim action. We've got data -- there are a series of monitoring wells around Pit 9. We know that there are volatile organic compounds leaking out of Pit 9. And those are the carbon tetrachloride and trichloroethylene, those cleaning solvents --

UNIDENTIFIED: Okay.

MR. MACDONALD: So those things are being released from the pit to the environment outside the confines of the pit. That's one -- that's one of the big drivers here is that's going to continue until something is done with that material in Pit 9 to stabilize it. We have no mechanism other than removing and treating that waste to stop any further releases. So --

MR. TURNER: But in the decision-making thing it says select the remedy, not to look at what's in the ground --

MR. MACDONALD: Yes.

MR. TURNER: -- but to select a remedy of the first decision-making tree. If yes, it goes to interim action, but if you don't know the remedy yet it continues on an RI/FS track.

MR. MACDONALD: Right. And we feel we have enough data to select the remedy, which is physical separation/chemical treatment/stabilization. These pieces of this process are designed to make sure that that remedy will work as advertised.

We think this is an appropriate remedy to take because it will -- it removes Pit 9 as a source area. The residual material, the concentrated waste form is reduced in volume significantly over what -- so that's a much smaller volume of waste that has to be -- that has to be stored for some interim basis and ultimately disposed of somehow.

MR. TURNER: Okay. I think I get it. So the only difference probably would be you go through a normal remedial investigation process if you already -- if you had no idea what was down there or if you don't know enough --

MR. MACDONALD: Exactly.

MR. TURNER: -- about what was in there?

MR. MACDONALD: Exactly.

MR. TURNER: Okay.

MR. MACDONALD: You do that remedial investigation to determine what the physical state of the release site is. Are there contaminants present? Are they being released or in a state where they can be released to the environment to pose a risk? We know that Pit 9 has these materials in there.

MR. TURNER: So the risk assessment has nothing to do -- the backing off of the risk has nothing to do with decision making on the RI/FS?

MR. NYGARD: Well, --

MR. MACDONALD: It's an interrelated process.

MR. NYGARD: We discussed risk in the proposed plan, but only in a qualitative sense. We didn't go out and collect samples and say here's the risk, run a lab risk calculation model. We have information, as Don mentioned, that tells us we have things that are escaping the pit, and we're proposing this action.

MR. TURNER: Okay.

MR. NYGARD: This action will reduce those threats. It's not that we're backing off of the risk. As we stated in the proposed plan, the initial preliminary risk evaluation that was done and presented in the last proposed plan -- and again as presented in this plan and available in the administrative record somewhat overstated the risk. That was a concern a lot of people had, that, well, this isn't reality out there. The pit contents are not all mixed up and available to a worker who is out at the site. There's soil over the top of that site. There's grass growing out of it right now. And it's not -- it was a hypothetical condition that really does not exist at this time.

I wanted to clarify that, because that scared some people. That was put in there to say that at some future time some condition could exist that may be like this, but it was not the condition. So we clarified our position on that to indicate to people that, yes, contaminants are being released from the site, that they are really not adversely impacting individuals presently right now that we know of. We're taking this action to minimize any future risk.

MR. MACDONALD: This gentleman right here.

UNIDENTIFIED: Thank you. There was some mention about the intermediate processes and the proprietary nature of the process. The intermediate steps of the -- of each of the processes is immaterial to the final -- final product provided that there is no adverse impact on the environment or the workers. I would like to ask some questions about the final product if I may, probably to you, Doctor.

DR. KOLTZ: Sure.

UNIDENTIFIED: The thermal treatment that you're talking about is basically ex-situ vitrification?

DR. KOLTZ: That's right.

UNIDENTIFIED: Except that you're separating out things so you don't have as much to process?

DR. KOLTZ: Excellent answer.

UNIDENTIFIED: Now, the other one, the other one I really want to ask a question about: what is going to be the final -- the final product on that side? It's not going to be the same. It's not going to be a block of glass or a casting. What is it?

UNIDENTIFIED: What's the physical form?

UNIDENTIFIED: Yes, what's the physical form?

DR. KOLTZ: What can come out of this evaporative concentrator, depending on the feed that goes in it. For example, if you happen to feed soils into it, what comes out will look almost like soil. If you happen to be feeding a lot of sludges into it -- especially a lot of regal oils -- the regal oil, it's a grease material that was used as a lubricant.

If by your processing you have a lot of those oils in there, what could come out of here could be very thick. It wouldn't be a solid. If it was the soil and if it passed the leach tests, it may be put into TRU storage as-is. That's this top arrow.

If it has a lot of oils in it that are not going to evaporate to dryness, to stability, then they would go down here to chemical binding. And Waste Management has been in the waste processing business for a lot of years and a lot of hazardous waste sites. So they've got various sulfur chemicals and various cements that are formulated to fit grease-type products that come from the evaporator.

Now, if for example you had -- one of the other sludges that came from Rocky Flats is a nitrate-based material that comes out of an evaporative pond. And in that case it would probably go to a special drying where they would actually decompose the nitrates and put it back to a solid material that would meet the leach test.

In this case, depending upon the consistency of the concentrate, they may put it in a polymer material, may put it in a cement material, or it may be acceptable as-is. But it has to pass all the leach tests and all of the hazardous requirements that are put on top of it and meet the INEL waste acceptance criteria before it gets here.

In addition as part of the POP test down here one part of their test is to take the materials that come out of this integrated test and make sure what they're proposing here works. And their final product to be judged successful to go on has to meet our TRU storage requirements that are in place.

MR. MACDONALD: Yes, sir.

UNIDENTIFIED: I want to get back a little on the summary of the site risks that you have right now. In going through this you present examples of radionuclides and carbon tetrachloride. Specifically with regards to the carbon tetrachloride, you show it being one microgram per liter above the Drinking Water Act in 1987, but in 1990 and 1991 the monitoring data shows that it is below the Drinking Water Act.

Second of all, in the amount of radionuclides you say they're at the detection limits of the instruments. What I am interested in is from a health based risk assessment -- I don't know if you've looked at that, but from a health based risk assessment what is the potential for carcinogenic risk in terms of ten to the minus four? And second of all, how does it compare to the ten to the minus four criteria used for disposing of the material back into the pit which is described on page eleven, the bottom paragraph, where you say the criteria for residuals returned to Pit 9 are, one, a current industrial scenario of less than ten to the minus four for carcinogenic risk or less than one hazard index for noncarcinogenic health effects?

MR. MACDONALD: There's a lot there. Let's take it in some steps.

First of all, talking about the drinking water standard and what that was, I'm going to use this to help illustrate. From the surface of -- ground surface at RWMC to the Snake River Plain Aquifer is about five hundred eighty feet. So that's the distance you're talking. We've got twenty feet from the surface to the top of the basalt layer. Then we've got these layers upon layers of basalt at ever increasing depths. Interspersed between some of these layers of basalts are interbed layers that are like surface soils and cobbles that you would find in river beds and things like that. So the geology is built up over a series of volcanic events, lava flows interspersed with sedimentary kind of materials.

What's happened out of Pit 9 and out of other pits -- as I said, the volatile organic compounds -- the drums have been breached. Boxes have deteriorated, et cetera. So we've got carbon tetrachloride principally that's moving through this basalt layer and it's -- we find that material in a wide distribution underneath the Subsurface Disposal Area.

There are elevated levels of -- by elevated I mean -- I mean you normally don't find carbon tetrachloride in groundwater. It's a man-made substance. So if you find anything above zero, it's an elevated level. If you find that at elevated levels in the Snake River Plain Aquifer -- in 1987 in one sampling event it was found at a level of six parts per billion, and the drinking water standard is five parts per billion, so one part per billion above that drinking water standard.

Subsequent monitoring events have -- we never found another -- pulled another sample that showed it above that drinking water standard. That standard is a health based standard. I'm not sure -- Earl or Dean perhaps want to talk about what that standard relates to in terms of risk. I'm not sure.

So in terms of sampling of the aquifer there was that one event that was above the safe drinking water standard. We do find elevated levels. We can detect it in the groundwater, but it has never exceeded that drinking water level except for that one time.

UNIDENTIFIED: Well, maybe I'm wrong, but I had heard that drinking water level standards are based on ten to the minus six.

MR. NYGARD: Real close. Some fall into ten to the minus five, ten to the minus six range.

UNIDENTIFIED: What you're doing is you're putting stuff back in order to meet a ten to the minus four. Sounds to me like you have stuff that's cleaner than your criteria for putting it back. Maybe I'm disconnecting here.

MR. NYGARD: Okay. A lot of that has to do with the material -- we're talking about contaminants in drinking water versus solids, soils posing a risk going back into the pit. There is a difference there. The difference is this. Those are soils. Those are not in the drinking water.

We ran some modeling efforts. I have Dave Hoveland here, our geologist from the state, who can describe the modeling effort that went into determining whether or not that ten to the minus -- that return to the pit criteria for those soils -- how we made that decision, how it impacts the aquifer.

MR. MACDONALD: Bob Nitschke back here who does risk assessments for us will also -- there was a lot in your question. I want to make sure --

MR. NITSCHKE: I'm not sure I caught it all either. One distinction is taking one exposure route and one contaminant and assigning it to a ten to the minus six risk is totally different than taking the whole multitude of contaminants that may be there through all exposure routes, through ingestion, through inhalation, drinking, dermal contact, direct exposure to radiation.

So that's why you'll see some distinction in what we're seeing in that return to the pit -- that the cumulative effect of all the contaminants that would go back through all the routes be considered for a residential or industrial scenario would result in a risk -- in the acceptable risk range according to the NCP.

Obviously we want to do better than that, but that would be -- you know, that is the minimum acceptable standard. So that's a distinction there.

MR. MACDONALD: Let me try to give you a shot at the -- well, --

UNIDENTIFIED: Let's get going.

MR. WADE: If I can hit it real quick, let me --

the paragraph you read starts out: the criteria for residuals returned to the pit or for waste to be left in place in the pit. So there's two distinct differences there. Then you've got one, which is less than ten to the minus four, the other part being meets land disposal restrictions. If we pull that waste out of the pit and run it through a treatment process, it has to meet the LDR requirements, land disposal restriction requirements, prior to putting it back.

UNIDENTIFIED: Yes. But if you don't pull it out, it doesn't have to meet land disposal requirements?

MR. WADE: That's right. And if it doesn't -- what we're saying is if we don't pull it out is because it already meets the ten to the minus four. So the concern of saying, well, if it's ten to the minus six at the aquifer so you're putting ten to the minus four back -- we're not going to treat that part of the material because it's -- it's exactly what you said. We don't have to pull it out and treat it if it's not an unacceptable risk.

UNIDENTIFIED: I understand that. The question I have is why are we pulling it out if in fact -- I'm getting a disconnect because it seems to me that Pit 9 is a relatively benign site. If in fact --

MR. MACDONALD: No, no.

UNIDENTIFIED: No?

MR. MACDONALD: We've got -- there's an estimate of twenty-two kilograms or forty-four pounds of plutonium in Pit 9. If you distribute that evenly throughout the whole pit -- I don't know what that comes out to in terms of activity, but it is well above ten nanocuries per gram.

MR. WADE: About fifty nanocuries per gram.

MR. NITSCHKE: Actually it's forty-three.

MR. MACDONALD: Thanks. So again that coupled with the fact that we've got the volatile organic compounds -- carbon tetrachloride is a class A or listed carcinogen I believe. Trichloroethylene is a suspected carcinogen I believe. So they're not pleasant things in the pit certainly. And we want to try to reduce that risk. As it is, it does pose a potential risk to people. We certainly know it's releasing volatile organic compounds.

MR. NYGARD: Or would in the future is what we're getting at. Basing a lot of this on simply the fact that there does appear to be some nozzle length between materials contained in the pits at the SDA, and these detections at depth in the hundred and ten foot interbed, which is where the radionuclides were detected, and in the volatile organic detection near approximately the drinking water standard in the aquifer. It's not at nozzle length between Pit 9 and those findings because we don't have the data to say this is where it came from. But we do have information that says that those kinds of things are at depth.

MR. NITSCHKE: I do have one other thing. When we did that preliminary health evaluation and we did homogenize the volatile organics as well as the radionuclides, obviously the nuclides were, you know, an unrealistic to date scenario. What it did say is the fact that it's uncontained and could move, could create potential problems by ground squirrels and sagebrush.

But just looking at volatile organics and that mixture which wasn't so unrealistic, we still in fact, using the standard Region Ten default values for industrial scenario, got a hazard index greater than one and a carcinogenic risk through carbon tetrachloride of in the ten to the minus five range just from that one volatile alone. So that particular homogenization lent itself to, you know, numbers that can be provided to the regulators to decide what to do.

MR. MACDONALD: Did we get everything answered?

UNIDENTIFIED: You said the risk was approximately ten to the minus five?

MR. NITSCHKE: Yeah, I believe so.

UNIDENTIFIED: Is what your calculated risk was?

MR. NITSCHKE: Well, that was just from one exposure route for carbon tetrachloride. I think it was ingestion.

UNIDENTIFIED: Probably another order of magnitude for shower inhalation?

MR. NITSCHKE: We didn't evaluate that. For that particular thing it was inhalation and ingestion were two routes that we looked at for the occupational exposure. But just to give you some idea -- you know, that's some of the information that's of value for the decision maker with respect to the present situation.

UNIDENTIFIED: Is there more information in the administrative record on this, more detail?

MR. NITSCHKE: That entire report is in the administrative record.

UNIDENTIFIED: Okay.

MR. WADE: Referring to the preliminary risk evaluation.

MR. NITSCHKE: Right.

UNIDENTIFIED: And on the detection limits of the radionuclides, is that in the nanocurie range --

MR. WADE: Yes.

MR. MACDONALD: Take one here then over here.

UNIDENTIFIED: Does this ten to the minus six take any account of the fact that the nearest population of any size like Springfield or Aberdeen are sixty miles away, maybe Rupert? The dilution effect would reduce that ten to the minus six still further, wouldn't it?

MR. NITSCHKE: You bet.

UNIDENTIFIED: Significantly.

MR. MACDONALD: Go ahead. Do you want to do scenarios again, Bob?

MR. NITSCHKE: Part of the calculations and one of the things that we provide -- the risk assessment essentially just provides information to the regulators. And part of the deal -- we look at likely scenarios that may happen and likely locations it might happen. So for the purposes of providing information we evaluated a receptor at the Pit 9 boundary, at the WAG 7 boundary, which is the area of the SDA and the burial ground, then at the edge of the INEL boundary. And we did that -- like today we know that there's no one living on Pit 9. There's not going to be anybody living there tomorrow. In a hundred years we don't know. And so we provide information to the regulators and say that if someone were there then that would be the risk. And in that report you'll see the sensitivity to distance based on the dilution. And those numbers do drop off radically.

So again it's providing information. And they can decide how likely that is that someone would be there, and would they be willing to accept the risk, and that's how they make the decision. So --

MR. MACDONALD: Yes, sir.

UNIDENTIFIED: There's a lot of questions about numbers and what they mean here. I have a question about the regulation process. In particular the National Environmental Policy Act would appear to apply to this action. What' going to be the involvement in the NEPA process?

MR. WADE: The NEPA process is a part of this action. We're fulfulling the requirements of the NEPA process now. We've got an action description memorandum, which is the document used to describe the action and then determine the appropriate level of NEPA documentation that's been approved by headquarters indicating we should do an environmental assessment for this project.

The environmental assessment is -- because we are now in the process of integrating the NEPA and CERCLA processes, the environmental assessment as it stands right now is the proposed plan. However, this is back in Washington being reviewed to determine if it is indeed adequate and has enough information to meet the NEPA needs. We are currently doing an environmental assessment. That will be that the environmental assessment has to be approved and the determination from the environmental assessment of a finding of no significant impact or an EIS has to be made prior to we at DOE submitting a draft final record of decision to the state and to the EPA.

UNIDENTIFIED: So that determination will be a formal part of the process?

MR. WADE: Yes, it will, and it's currently ongoing.

UNIDENTIFIED: Okay.

MS. BRAILSFORD: What other entities will see the EA besides -- I guess besides state of Idaho DEQ?

MR. WADE: It doesn't -- it actually doesn't go to DEQ. Dean's part is to review the CERCLA process, and they look at some of the NEPA documentation -- Dean, correct me if I'm wrong -- but NEPA goes to Steve Hill and the oversight office as well as to the Indian tribes of Idaho. It's still part of the NEPA process, and it's going to go through the normal chain that a normal EA would go through. However, we're using the same document to do it as part of integrating the CERCLA process with it.

MR. MACDONALD: And as Jim said, in essence we're using the proposed plan as the EA. So if it needs to be -- if there are clarifications needed or more data needed to comply with the NEPA process, we'll end up providing some sort of supplementary information. But in essence that proposed plan you're looking at is the environmental assessment. So you're seeing it at this point too. Yes, sir.

UNIDENTIFIED: I have a couple of questions about the environmental impact of the process itself. You listed in here about being in compliance with NESHAP, the Clean Air Act. Is this process going to be lumped in with the laboratory as a whole for purpose of complying with sub-part H of NESHAP, or is it going to be a separate entity of itself? Sounds like an EPA question.

MR. LIVERMAN: In other words -- well, I'm sorry. I missed the --

UNIDENTIFIED: Okay. According to the Clean Air Act the laboratory as a whole has to meet a standard, a certain dose rate, minimum dose rate to the public --

MR. LIVERMAN: So an independent laboratory that would be responsible for evaluating --

UNIDENTIFIED: No, no.

MR. WADE: I can get this one, Earl. I don't know. Maybe Dean can cut in. INEL has a NESHAP permit for air emissions. Now, when the Pit 9 project -- when the technology is selected, we will take information from their emissions, and that will have to comply -- it will be rolled --

UNIDENTIFIED: Rolled all in one.

MR. WADE: -- a cumulative impact --

UNIDENTIFIED: That's what I was asking, yes.

MR. WADE: -- to ensure that the INEL emissions are still below the standard.

UNIDENTIFIED: How much of a cushion does the rest of the laboratory have?

MR. WADE: I don't have the answer to that.

MR. NYGARD: I don't have the answer to that either unfortunately. What I do know is DEQ has been involved in putting together an inventory for some time. And that's with the Technical Services Bureau in DEQ.

UNIDENTIFIED: Well, the EPA should be given a copy of a report every year to show compliance or noncompliance. I was just wondering what the numbers were and how they would fit in.

A second question would be water. There's no mention of water here, but both of these processes are going to use probably considerable quantities of cooling water. Is there any possibility of cross-contamination with cooling water? And if so where does the water go? How is it processed?

DR. KOLTS: There is no water that exits from the system.

UNIDENTIFIED: From either process?

DR. KOLTS: From either process.

UNIDENTIFIED: How do you cool the three thousand degree furnace?

DR. KOLTS: With the water that's fed into the solvent extraction. It's a big loop.

UNIDENTIFIED: Big loop?

DR. KOLTS: And in fact it's a net user of water.

UNIDENTIFIED: All right.

MR. MACDONALD: Yeah.

UNIDENTIFIED: I have an answer, not a question. To answer your question, the INEL publishes an annual NESHAP report and the annual -- I believe the standard, the EPA standard is ten millirems --

UNIDENTIFIED: Correct.

UNIDENTIFIED: -- per maximum exposed individual. And I think the numbers in the annual reports end up showing about five or six to the minus four millirems to the maximally exposed individual. So there's quite a bit of leeway --

UNIDENTIFIED: Okay.

UNIDENTIFIED: -- for something like that.

MR. MACDONALD: That's just on radiation.

UNIDENTIFIED: That's for the NESHAP for the radionuclide emissions.

MR. MACDONALD: Thank you. Yes, sir.

UNIDENTIFIED: I've got a couple quick ones. The first one is an easy one. Then I'd like to ask my second phase. Where are the POPs, the two POPs, physically going to take place? Where are they physically going to take place geographically?

MR. HUGHES: In Waste Management's case they're going to perform the integrated process demonstration in South Carolina. For the dig face monitor both Lockheed and

Waste Management will perform it down in Los Alamos. For Lockheed's case --

DR. KOLTS: These two are performed in Las Vegas. This is performed in Butte, Montana. And California, by the way.

UNIDENTIFIED: I assume that you all are going to send representatives to monitor closely every phase of this so that --

MR. HUGHES: Yes, sir.

UNIDENTIFIED: Especially Las Vegas.

UNIDENTIFIED: Los Alamos too.

UNIDENTIFIED: Nah. I've been there.

UNIDENTIFIED: This one -- I don't have a problem with the purpose of this, and the purpose appears to be the removal of a source of mixed contamination. Obviously Pit 9 appears to be from the map the tip of the iceberg of other waste that's out there. This process appears like it's going to take -- just Pit 9 is going to take several years to remediate.

In parallel with this are there parallel actions that are in place or going to be undertaken where the technology currently exists to remove the primary short-range risk which is the chemical contamination to the aquifer such as pump and treat or vacuum extraction or these types of alternatives that are currently in process around the country to remove sources?

If Pit 9 is excavated, at what point do you stop excavating -- you say you run samples, but whatever is leached out of that is still a potential source and is going to continue to be a contributor not only from Pit 9 but from the other pits.

MR. MACDONALD: This Pit 9 -- you're right -- is just merely one component of the overall approach to try to deal with contaminants at the RWMC. Underway right now is a remedial investigation and feasibility study to try to determine the extent of contamination from organic compounds that have leaked out of pits and trenches.

That investigation should be finished in the summer to fall time frame of 1993. Out of that will come a decision as to what to do with those volatile organic compounds that have left pits or trenches. Part of the remedial investigation and feasibility study is a treatability study to determine the effectiveness of a vacuum extraction system for removing volatile organics that have leaked out of pits and trenches. So we are pursuing that on a parallel path to dealing with source areas such as Pit 9.

UNIDENTIFIED: Last question.

MR. MACDONALD: Fred.

UNIDENTIFIED: How much of this project is currently funded? Is phase one completely funded? The eighteen million dollars is funded?

MR. WADE: Sixteen million.

UNIDENTIFIED: Or sixteen million.

MR. WADE: It's funded. It's a funny thing. The money is available so it is funded. But the money is not spent because again they have to successfully complete the process.

UNIDENTIFIED: Well, I appreciate that. Phase one is a go?

MR. HUGHES: Yes.

MR. WADE: Yes.

UNIDENTIFIED: Phase two will be dependent on next year's budget, whatever --

MR. HUGHES: Well, --

MR. WADE: Dependent upon the successful completion of the POP test.

MR. HUGHES: Primarily.

UNIDENTIFIED: And next year's budget.

UNIDENTIFIED: And next year's budget.

MR. MACDONALD: Ultimately it's congressional appropriations --

UNIDENTIFIED: Sure.

MR. MACDONALD: -- which determine what's available.

UNIDENTIFIED: On your production what size are you going for? How many pounds an hour, tons an hour?

MR. WADE: Full-scale production?

MR. HUGHES: In Lockheed's case I think they said that they're anticipating that would run roughly two thousand pounds per hour in order to make our schedule.

UNIDENTIFIED: How many years you figure are going --

MR. HUGHES: In both cases what we've asked them to do and in their proposal they demonstrate how they meet that schedule, but it's roughly a year for those final phase --

UNIDENTIFIED: No, I mean once you get it in production how many -- are you going to go on for --

MR. HUGHES: No. It's one year and the pit is cleaned up.

UNIDENTIFIED: One year?

MR. HUGHES: Yes, sir.

MR. MACDONALD: Any other questions?

UNIDENTIFIED: Yeah.

MR. MACDONALD: Yes, sir.

UNIDENTIFIED: At the end of the year when Pit 9 is cleaned up, who owns the equipment? Is this something that the laboratory will -- or the government will own? Or does the company still own it and they take it back? Are you buying the equipment or just buying their service?

MR. HUGHES: One of the unique things about this project and the contract that we're going to be negotiating, we're buying the services of the company. So they own the equipment. They own the building. We're paying them unit prices to process the various waste forms. So when the job is done -- they factored in all these various costs in their unit prices. But they own the building, and they have to dismantle it and restore the pit to its natural environment.

UNIDENTIFIED: You want to move on to the next pit, go through the whole process all over again?

MR. HUGHES: Certainly. There will be a period of time at the end of the project -- maybe Don can address that better.

MR. MACDONALD: If we want to do another pit or trench, yeah, we -- I mean we work within the confines of the Federal Facility Agreement. So if we were going to go do another interim action, we would work through this process again for another trench.

MR. WADE: We would probably use the same building and the same process. We wouldn't have to do the phase one or the phase two parts of the process.

UNIDENTIFIED: Unless there was a competing bidder if you put it out for bid again? They would have to be able to prove their process also?

MR. WADE: Right.

MR. MACDONALD: Ultimately -- at least personally to me the ultimate would be to have both of these companies pass this. That way we still retain some price competition and that sort of thing, and we have two different types of processes that work and can be utilized and not just -- we're not just looking strictly at application at the INEL. There are similar problems at other locations throughout the country. So the thing -- the process here has application potentially at other DOE sites or private sites potentially too so --

MR. HUGHES: One reason Pit 9 was picked is the waste material in the pit is representative of the waste material that's spread throughout the waste burial ground. So if these processes work on Pit 9, there's an excellent probability that they are -- they have application to the rest of the disposal area.

MR. MACDONALD: Yes, sir.

UNIDENTIFIED: If this all works, what fraction of the Radioactive Waste Management Complex is Pit 9? How many year's work -- assuming this is one year's work -- would it take to process the entire complex?

MR. MACDONALD: I don't know. It would depend on how many additional pits and trenches we had to do. The total area of the Subsurface Disposal Area is eighty-eight acres. Pit 9 is about one acre of that. Not all of the eighty-eight acres has transuranic materials buried within it. I think --

MR. WADE: Based on the rating that I have done, Pit 9 would be about one-fortieth.

MR. MACDONALD: Yeah.

MR. WADE: So if you were just going to use this building and just going to use this process and you just extrapolate it, it would take forty years.

MR. MACDONALD: And you did all the rest of the -- all the rest of the --

MR. WADE: But if this process works and works as advertised and is proven, there's nothing saying that you can't --

UNIDENTIFIED: Upscale it?

MR. WADE: -- upscale it. And again that one out of forty is kind of my estimate and what I've seen from the Subsurface Disposal Area.

MR. MACDONALD: Go back here.

UNIDENTIFIED: Now, once we choose the guy that's going to do this, the company, and you're going to negotiate a unit price up front?

MR. MACDONALD: Right.

UNIDENTIFIED: So essentially this is a fixed price contract?

MR. HUGHES: Yes.

UNIDENTIFIED: Okay. And if he gets in trouble or if his process breaks down or he runs into a tank down there, that's too bad; he bought off on it?

MR. HUGHES: Yeah.

UNIDENTIFIED: Or is this a situation where he's going to come back and say I'm hurting, guys; I need some more money or --

MR. HUGHES: No.

UNIDENTIFIED: So unit price? I got ten thousand cubic yards or fifteen thousand cubic yards, and this is how much it's going to cost and run it for a year?

MR. WADE: One of the things we're trying to do with this process is get away from the normal way the government does business. We want people -- it's just like when you go buy a washing machine. If the thing doesn't work, -- you know, if you've already bought it and the guarantee's worn out, you're stuck. Well, that's what we're asking this guy to do. You told us your process will work. We're not going to pay you to do some pie-in-the-sky-type stuff, because we're not getting anything out of it.

UNIDENTIFIED: Well, you've already paid them the eight million dollars to prove their process.

MR. WADE: That's right. If they proved it. So the next step is you have to meet the LPT, the limited production test, before we proceed. And we're not going to pay until we get what we want to pay for. We're asking these companies to show us what they've got. Will your technology work, and if it does we'll pay you for it.

MR. MACDONALD: Did you have a question back over here?

UNIDENTIFIED: Yeah. I was just wondering why Pit 9 was selected as the interim action versus other transuranic pits. Is it just because you know more information about what's in Pit 9?

MR. WADE: Pit nine's got several good -- one of the reasons is because we know the most about it. Like I said earlier, it's one of the later pits. We've got a good inventory of what's in it and where it's located.

Pit 9 is also located up here in the corner. It's relatively isolated from the rest of the Subsurface Disposal Area. So it's isolated. We know a lot about what's in it.

Then to get back to the risk issue, Pit 9 is not the worst pit out there. It's not the best pit either. It's a good representation of what's in all the pits with a middle of the road risk that says it's probably a good pit to go in and do the interim action on. Because the risk isn't so great that we're going to put workers or the public or the environment at risk, but it is enough to trigger an interim action.

UNIDENTIFIED: Okay. It's enough to trigger an interim action. Therefore --

MR. WADE: Right. You know, I guess to trigger an interim action is -- well, there's three reasons you can go to an interim action. One poses an imminent risk to the public health or the environment. One is to eliminate a potential source of risk, which is what we're doing in Pit 9. And again because of what's in there and the fact that it's possibly moving out of there, that's the potential risk we're trying to eliminate. That's what triggered the interim action. But there's not enough risk or so much risk that you can't go in and try a process that you've never tried before on this type of waste pit.

UNIDENTIFIED: Got to start somewhere.

MR. WADE: Right.

MR. MACDONALD: It's about quarter to nine. Been at this for about an hour. Do people have a lot more questions left? Do we want to take a break now? Any general thoughts? Why don't we go ahead and take a break. We'll come back after that break and start taking formal comments at that point.

(Brief recess)

MR. MACDONALD: I neglected -- and I apologize -- to make sure everybody was aware that up front on the table back there there is an errata sheet relative to the proposed plan.

There are two areas that needed clarification, and those are provided on this sheet. One was in reference to the in-situ vitrification alternative, and one was on -- part of the discussion on page twelve about the waste management process itself. So we've issued those clarifications and they are back there. People should pick up a copy of that with the proposed plan.

We'll do the formal public comments at this point, verbal comments. Again if people have written comments you want to submit, be sure to leave those. If you want to have a comment recorded on the tape recorder, we've got that over in the corner. I would ask two things when you speak, to give your name, and we would like to keep the comments to five minutes to make sure people -- everybody who wants to comment has the ability to do so. And try to speak loudly so that the recorder can hear you please.

Did we have anybody sign up, Reuel?

MR. SMITH: We had one individual that indicated they would like to speak. There may be several others who decided to make comments.

MR. MACDONALD: Okay. Would anybody like to start off? Somebody want to -- anybody wish to give formal verbal comments? Going once --

MR. SMITH: Mr. Harten indicated he wanted to speak. I'll see if I can find him out in the hall.

MR. MACDONALD: Yes.

MR. DONNELLY: I have a question or a comment. I will give a formal written comment later. I'm Dennis Donnelly in Pocatello. The estimate is that there are forty-four pounds of plutonium or so in this pit. Really what I have is a question and an observation. The question of that forty-four pounds, since you have established -- well, not you but ever since the '70s the DOE has established a limit of ten nanocuries per gram for leaving it in place. My question is what fraction of the plutonium in that pit do you envision staying in that pit that is under ten nanocuries per gram?

And the observation is that the long-term contamination that would be due to the remaining residual plutonium has nothing whatever to do with its concentration in the short-term. Now, after the geologic mixing process and exposure to the aquifer you can expect quite a bit of dispersion. I expect even though it were -- well, I don't want to discuss concentrations. It seems to me the total burden of plutonium is a long-term threat that we've been worrying about ever since we discovered this stuff has gone in there. I don't know if you people want to address that at this time, but I would like it formally addressed and the NEPA involvement in that process.

DR. KOLTS: That's a question? I could give an outside limit.

MR. MACDONALD: Go ahead.

DR. KOLTS: Would you like me to?

MR. DONNELLY: It's a question.

DR. KOLTS: Pit 9 -- the middle of the pit where you saw all the stuff that's in there is about five hundred fifty thousand cubic feet. The Rocky Flats sludge that was placed in the pit in my estimate is about a hundred thirty to a hundred fifty thousand cubic feet, so a little over, what, a third to a fourth of the pit is actually sludge.

Now, one would expect from the drawings that most of the sludge is down on that bottom end. I don't know where that drawing is. This side -- here it is. Most of the sludges were stacked in this region. Most of the material that's not sludge is basically just clean dirt. It was just backfilled. What we expect is that that material will be clean. It won't have any radioactivity in it, especially this up here, and it wouldn't be processed. But in the worst case, the very worst case, if we take that forty-four pounds of plutonium and we disperse it through that entire material then remediate it back to ten nanocuries per gram, you will have about four to five pounds left in the pit when it's returned. Did I make sense?

MR. DONNELLY: You're saying you're going to get ninety percent of it out roughly?

DR. KOLTS: No. What I'm saying, if I take that forty-four pounds and I evenly disperse it through the pit -- if you take forty-four pounds and you just disperse it through the entire pit --

MR. DONNELLY: The average.

DR. KOLTS: -- the average ends up about forty to forty-five curies. Now, if you --

MR. DONNELLY: Nanocuries.

DR. KOLTS: Nanocuries per gram. To put it back in the pit it has to be less than ten. So what you've done is dropped it to a fourth. So a fourth of forty-four pounds is -- what is that? About ten pounds. I'm sorry. It's about ten pounds of plutonium.

MR. DONNELLY: But you're not going to do that?

DR. KOLTS: No, we're not going to do that. Most of this dirt is going to be totally clean. It's even going to be processed. So, you know, the worst case is that it's totally dispersed, and you've got ten pounds. Realistically based on the processing the way we're going to segregate the dig face I would guess maybe a pound afterwards, but I'm just flapping my arms.

MR. DONNELLY: I'm less interested in your guess at the moment than in some kind of assurance that, well, you've got a couple barrels here. They're pretty close. Throw in some dirt, put them back in.

DR. KOLTS: No, no, no, huh-uh.

MR. DONNELLY: I'm glad to hear you say that.

MR. MACDONALD: Close doesn't count.

DR. KOLTS: Close doesn't count. Two hundred grams, that's for criticality control. That's all that's for. Once they've dug it up they're going to put it into a box, and that box has a specific spatial resolution to go through, what they call a passive active neutron detector. And that detector is sensitive enough to discriminate above or below ten nanocuries per gram. If it is above ten nanocuries per gram, it will be processed. No dilution. No addition. It will be processed. Not only that, but it will be sampled and go to the analytical laboratory for hazardous materials including carbon tet. If there is absolutely no radioactivity but there are hazardous components detected in it, it's still processed. See? I hope you've got a feel for what we're doing.

MR. DONNELLY: Good.

DR. KOLTS: Dilution is not the solution.

MR. MACDONALD: Okay. Did anybody have any comments?

MR. WADE: Is he coming back, Reuel?

MR. SMITH: I saw Mr. Harten in the hall, and he indicated he would send in a written comment.

MR. MACDONALD: All right. Okay.

MR. TURNER: I have a comment. My name is Roger Turner. And I guess one sense I have out of these more recent meetings is more and more a confidence in the science as far as the cleanup and many of the processes and less and less confidence in the regulators and in the ability of DOE to really involve the public.

At the beginning of the Federal Facility Agreement and Consent Order process the regulators announced that they were working on that process and met for years before they allowed the public an opportunity to look at it. You know, and then there was one comment period open on the end of that process that allowed the public to -- all over the United States to take a look at that. And there was a tremendous amount of comments on the Federal Facility Act as it was drafted.

There was a number of comments from other states, in Colorado that had had some of the -- basically participated in and seen some of the problems associated with Rocky Flats that made comments that would have strengthened the state of Idaho's position and increased the potential for public involvement.

And instead the regulators and the state chose to not change anything on the Federal Facility Consent Order. And therefore we came out with this product today.

My comments are directed not so much in this case at Pit 9 as I see more and more of a confidence in the science that's happening out there, but more -- as the production here becomes slicker and slicker, more and more are we seeing I think the science people doing what they want. The regulators are told later. And the public if at all is told much later.

In particular the case of Pit 9, we had hearings almost a year ago that discussed the risks associated with Pit 9. And we were told that in order to drive an interim action the risks needed to be high and the risks were high. And we were talking about some single and double digit numbers in terms of risks to the public from Pit 9.

Subsequently it's been backed off to the tune of three digits are being juggled back and forth. What we're seeing I think is more and more separation between what's really happening and what's going on with -- what's being fed to the regulators and the public.

What we're seeing is that the numbers are back calculated back to the public after they've done what they want to. This has been -- this process has been driven into an interim action which doesn't follow the Federal Facility Act. So what we've seen in fact by definition on Pit 9 is decisions to run on interim action based on the adequacy to select a remedy.

The proof of process as we've heard the

description today is not by any means a remedy. And there's two phases left that I would say this is some type of a process to do research and development. My point is not that this process shouldn't be done. And I think it's probably the most appropriate for Pit 9. But why were we given the Federal Facility Act, given the opportunity to comment on it, then as it was written you don't follow it anyway?

The fact is by anybody's definition this is research and development. And as I -- again I want to make the point that I think interim action in terms of -- if it's really saving time is the way to go scientifically. And that in this case it -- maybe cheating as far as the process is concerned is the best way to go if it's going to save money or reduce the risk. But as you continue down these processes where you don't listen to the public, you don't follow your own regulations -- the regulators sit back and basically listen but are not really involved in the initial process.

Contracts are let out a year in advance of these public hearings in the sense -- in the first place, they attempted to completely be silent about it and not include the public in terms of that. These are all indications that we're seeing a polarity between what the DOE wants to do, and as these public hearings get slicker and slicker it gives them an easier out to not really involve the public and to really -- I'm beginning to wonder if they really involve the regulators.

I guess -- you know, that's my comment. I think that I would like to see a little bit more of a process involved in these discussions. If we're going to follow the Federal Facility Act and the National Contingency Plan, let's talk about how you're really doing that and how you're involving the public appropriately in some of the decision making processes that the regulators have to go through. Thank you.

MR. MACDONALD: Just one clarification to make sure I understand. When you're saying the Federal Facility Act, are you talking about the Federal Facility Agreement and Consent Order?

MR. TURNER: Yes.

MR. MACDONALD: I just wanted to distinguish --

MR. TURNER: Sorry.

MR. MACDONALD: -- because there was a recently passed Federal Facility --

MR. TURNER: In every case I said Federal Facility Act I would like to make that changed to FFA/CO.

MR. MACDONALD: Thanks. Anybody else want to make any comments?

MS. BRAILSFORD: My name is Beatrice Brailsford, and I'm coming as an individual. And I think I would like to echo much of what Roger Turner said. It seemed to me that the difference between this proposed plan and the proposed plan we saw earlier this year was a matter of editing in large part. And in some ways it was interesting to see that there was some sort of at least editorial response to the public comments that you received. But it didn't seem to me that -- it seems to me that we're still running on two parallel tracks, particularly on Pit 9, but I think potentially on the other eighty-seven acres at SDA.

We are going to start the proof of process test before we have a record of decision so that -- that in itself is a violation of the way this process is supposed to take place. And I know that you were really hammered on this last night in Idaho Falls; so I really didn't want to bother to bring it up. But I think it's important to recognize that you folks since long before the first beige document was produced have been proceeding apace with a cleanup plan for Pit 9. And in the process we've gotten a couple beige documents over which we have almost no control whatsoever. So I guess, you know, that's just a statement of -- that's an observation because like Roger in some ways you catch the public in a real bind.

We can -- you know, in some ways it looks to us like our choice is we can make the public involvement process work right, and by doing that we stop cleanup at INEL. So there's a little bit of a ransom note going on here I think.

And I guess speaking of ransom notes I would like in the responsiveness summary a real complete discussion of how the two alternatives presented in the environmental restoration and waste management EIS for INEL -- there was a notice of intent published that presented two alternatives for that EIS, and it struck me that those two alternatives were extraordinarily irresponsible on the part of the Department of Energy.

I'm addressing particularly the fact that one of the alternatives the Department of Energy said that it would have to violate the Federal Facility Agreement, that, you know, if the public of Idaho chooses not to receive more spent fuel we have in that decision chosen not to do cleanup.

So I want a real complete discussion of that in the responsiveness summary. I hope perhaps from a more responsible element at the Idaho National Engineering Laboratory.

And I guess I would like to close by saying -- repeating the observation that you have been proceeding apace for quite some time and have been spending money and making a good many decisions about the Pit 9 cleanup process. In the Snake River Alliance's comments on the Five-Year Plan, the Site-Specific Plan, we outlined -- gave a very explicit outline of what we think a site advisory board should do.

I know that the Department of Energy is planning to establish site advisory boards probably in the fairly near future. We are concerned because if it's a bad site advisory board it makes this whole process worse. If it's a good site advisory board, however, someone besides yourselves would have been monitoring your activities the past couple of years, the activities that produced this display here this evening. Thank you.

MR. MACDONALD: Thanks. Anybody else? Yes, sir.

MR. DONNELLY: Yes. If no one else wants to take some time, I have a little story to tell just to amplify --

MR. MACDONALD: State your name.

MR. DONNELLY: I'm Dennis Donnelly.

MR. MACDONALD: Thank you.

MR. DONNELLY: Pocatello. To amplify a little bit on what Roger Turner said about the inaccessibility of the public to the process here or the fact that it seems to be a research and development project of some sort going on in the name of cleanup, about a year ago there was announced a public bidding process with information available to contractors. And it was before the bid opening. But I decided I was potentially interested in this myself, and I called up to the site to ask for information and the protocols for bid proposal. And this is before the announced bid opening. And I was told that the information wasn't available to me, couldn't be released, and that the process was already closed in advance of the bid opening, that the participants were already decided on and that I couldn't participate.

Now, that sounds strange at least, and at most you could read a lot more into it. But it certainly supports what Mr. Turner has said. I just want to note in passing that we don't -- we don't have a -- an apparently rational process going on here.

Second, since you people have come to Pocatello -- and thank you for coming to Pocatello, incidentally. It's a big drive to drive up to Idaho Falls or other places. Since you -- one of the reasons that you say -- one of the things you want to find from this meeting is the public's choice about processes. I would personally choose number five instead of these others because of the potential risk of airborne contamination by thermal processes. Thank you.

MR. MACDONALD: Thank you. Anyone else? Okay. Thank you all very much then for coming out tonight. Again if anybody wants to submit written comments, please do so. The address is back -- it's in the proposed plan. Pick up the comment sheet from the back if you want to use one of those. Then mail it in. Thanks very much.

(Whereupon the proceedings were concluded at 9:20 P.M., November 5, 1992.)

OFFICER'S CERTIFICATE

STATE OF IDAHO)
) SS
County of Bonneville)

I, Rebecca Myers, certified shorthand reporter and notary public, hereby certify that the foregoing transcript consisting of pages numbered from one to 84 inclusive is a true and correct transcript and record of the proceedings held at the public hearing on the revised proposed plan for a cleanup of Pit 9 at the Radioactive Waste Management Complex, Idaho National Engineering Laboratory held on November 5, 1992.

DATED this 9th day of November, 1992.

(Signed) Rebecca Myers
Rebecca Myers
Certified Shorthand Reporter
Notary Public
Commission Expires: 3/24/93

IDAHO NATIONAL ENGINEERING LABORATORY

ENVIRONMENTAL RESTORATION PROGRAM

IN THE MATTER OF:	)	
	)	TRANSCRIPT OF
REVISED PROPOSED PLAN FOR A	)	PUBLIC HEARING
CLEANUP OF PIT 9 AT THE	)	
RADIOACTIVE WASTE MANAGEMENT	)	
COMPLEX, INEL.	)	

Public hearing on the revised proposed plan for a cleanup of Pit 9 at the Radioactive Waste Management Complex, INEL, on November 4, 1992, at the Elk's Lodge, Idaho Falls, Idaho.

ORIGINAL

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DEAN NYGARD
Idaho Department of Health and Welfare

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Community Relations Plan Coordinator

November 4, 1992 7:05 P.M.

P R O C E E D I N G S

MR. MACDONALD: I would like to welcome everybody here tonight. I'll be the moderator of the meeting this evening. I am the program manager for the buried waste program at DOE-Idaho. The buried waste program is responsible for environmental restoration activities at the Radioactive Waste Management Complex. I hope you'll excuse the sniffling a little bit tonight. I've come down with a cold. I apologize for that.

There are a couple of different objectives we have here tonight. The first one is to allow members of the public to ask questions, get clarification, get information about what the Pit 9 interim action is and how we're proposing to go about that. That's explained in some detail in the proposed plan.

And for those of you who don't have a copy there are copies on the table if you want to go get one. As I say, that explains in some detail the range of preferred alternatives that were examined, talks about the risks posed by the site, and how we hope to go about cleaning up Pit 9.

The second objective here tonight is to take formal comment from members of the public who wish to do so. We will take verbal comments, and we will take written comments. We'll take verbal comments tonight from people.

People are also encouraged -- if you don't want to speak this evening, there's a yellow comment sheet that you can pick up. If you want to write down any comments here, turn that in, or mail it back to us, those comments will be considered. We will take written comments through November 21st. The comment period opened October 22. It's a thirty-day comment period.

I'd like to review the agenda real briefly for this evening. Again if all of you -- if you didn't pick up a copy of the agenda and you want to, they're on the table. What we'll do is a brief introduction here with who the people are up front, some other people that are with us tonight that are important pieces of this effort. Following that we'll do a presentation to try to take you through the key points of the proposed plan and highlight the preferred alternatives, the five alternatives considered and the preferred alternative in the proposed plan and give you some details on that alternative.

Following that presentation there will be a time available for questions and answers for people to get clarification on anything that we're talking about this evening, anything in the proposed plan. Following that we'll take a short break, ten minutes, fifteen minutes or so, at which time we'll come back and take formal comments from people, formal verbal comments.

I would like to make sure everybody is aware we have a court reporter here this evening. She will be taking a transcript of the entire meeting tonight so that we will have a transcript of the presentation, the questions and answers, and the formal comments. For the benefit of the court reporter if you're going to make a verbal comment tonight, when you stand up -- and we would ask that you stand up. It's a little bit easier to hear that way. Please please state your name -- and do you want an address?

THE COURT REPORTER: Just a name is fine.

MR. MACDONALD: Please state your name for the reporter so that she gets that and then go ahead and proceed.

We'll go ahead then. I'd like to make some other introductions here at this point. On my left is Jim Wade. Jim is project manager for DOE-Idaho for the Pit 9 project, part of the buried waste program. To his left is Fred Hughes. Fred is the Pit 9 project manager for EG&G Idaho, which is the management operating contractor at the INEL.

Also here with us this evening is Dean Nygard from the Idaho Department of Health and Welfare. Dean is the -- I'm not sure exactly what Dean's title is. At this time I would like to ask Dean if he's got comments to make or remarks to make to go ahead and do that.

MR. NYGARD: Sure, why not. I'll be very brief so we can get on with the presentations. Our role, as many of you know, -- the state of Idaho is a signatory to the Federal Facility Agreement and Consent Order under which this action is a part of that agreement. Along with the Department of Energy and EPA the state participated in the development of this proposed plan.

We support this action. We feel the preferred alternative best addresses the superfund criteria which is required to be evaluated under the agreement, and we're pleased to be here this evening.

I think over the past year for those of you that follow this process this past year we've had many proposed plans out on the street. I think we've accomplished some real milestones in the past year in implementing the Federal Facility Agreement, and I look forward to a long continued working relationship that we've established over the past year with DOE and EPA in these cleanup projects.

I'm here this evening to answer any questions that you have regarding the state's role in the cleanup process specific to Pit 9. So feel free to call on me at any time. Thank you. Welcome.

MR. MACDONALD: I'd also like to introduce Mr. Earl Liverman, who is here representing the Environmental Protection Agency, Region Ten, out of Seattle so -- Earl.

MR. LIVERMAN: Good evening. Again I'm Earl Liverman. I'm here tonight on behalf of Mary Jane Nearman, and I would also like to thank you for coming. If at any time during the course of this evening you have any questions for me, I will do whatever I can to answer those questions for you.

MR. MACDONALD: Two other quick points before we get into the presentation. There is a green sheet that was over on the table tonight. That's an errata sheet. There were two clarifications we wanted to make in terms of information that was in the proposed plan. And those clarifications are on this sheet. So people should take a look at those.

And one other thing, we also have copies of the INEL Reporter. This is a document which is put out on a regular basis to provide a status and update on the various cleanup activities going on at the INEL. So those are also available. As a point, there were two records of decision recently signed for actions at the INEL, not related to Pit 9 but for other actions on the site.

Does anybody have questions about the format or the purpose here this evening, anything we can clear up now?

Okay. Let's go ahead and try to get started with a brief introduction here. As most of you or all of you perhaps are aware, the INEL or Idaho National Engineering Laboratory is an eight hundred ninety square mile facility that's owned by the U.S. government, the Department of

Energy, is operated by the Department of Energy. Several contractors, the principal one being EG&G Idaho, Incorporated.

The INEL is located in southeastern Idaho in the Snake River Plain. This is the site boundary here (indicating). The area that we're going to be talking about tonight, as has been mentioned, is Pit 9. Pit nine is located at the Radioactive Waste Management Complex, which is down in the southwestern corner of the INEL. RWMC is an area that was established in 1952 for the disposal of radioactive wastes that were generated by site operations.

This photograph here is an aerial view of the RWMC as it exists today. The area we're going to be specifically talking about tonight is this area located right in here (indicating), which is Pit 9.

The area back up in here was area where waste has been buried since 1952. Starting in 1954 the INEL began accepting wastes that were generated from manufacturing processes at the Rocky Flats plant in Colorado. Those wastes were also buried in this area of RWMC. That practice was continued up through 1970. From 1970 onward the waste generated from the Rocky Flats activities that were shipped to Idaho have been stored in this area in the foreground here, part of them under an earthen berm, which is going to be real hard to see in this photograph, and part in these air support structures here.

So the practice of land disposal of that Rocky Flats waste which contains transuranic elements, plutonium and americium, was discontinued about 1970. There are still ongoing operations at the RWMC for the disposal of what's classified as low level radioactive waste. And those operations continue in this area within the RWMC today.

What happened back here, we have a whole series of pits and trenches that were dug into the surface soils, and the surface soils here are about twenty feet deep. And waste would be deposited in those pits and trenches and then backfilled over the top of it.

So that's to kind of orient you to what -- where Pit 9 is. It's a part of RWMC. It was used for the disposal of wastes that were generated both from INEL activities and from activities at the Rocky Flats plant in Colorado.

To give you some more detail on that and also talk about the proposed plan in some detail, I'll turn it over to Jim Wade at this point. Thank you.

MR. WADE: Thank you. I want to take a quick minute to thank you folks for coming tonight too. Last year when we did this public hearing we had a snowstorm that night too. Understanding the weather conditions, thanks for coming.

I'm going to jump into a little bit more specifics first off about what is Pit 9 and what's in Pit 9. As Don mentioned, there's roughly a hundred fifty thousand cubic feet of Rocky Flats and INEL waste located within Pit 9. Back before 1970 we used to dispose of it by dumping it or stacking it into the pits and trenches located at the subsurface disposal area. So these drums contain mixtures of hazardous radioactive waste that were used, as Don said, in the manufacturing processes at Rocky Flats.

They include transuranic waste such as plutonium and americium and hazardous waste such as volatile organics, specifically carbon tetrachloride, trichloroethylene, which are solvents or degreasing agents, used during the processes on the machinery that was actually in the processing of -- in the processes -- the manufacturing processes.

Now, because the waste was shipped to us in the late '60s, which was a pit -- I'm sorry. Let me -- post-1970 burial of this type of transuranic waste was discontinued. Pit 9 was an operable pit operated between 1967 and 1969. So we've got good shipping records and good indications of what specifically the hazardous material within the pit is and where it's located.

This chart indicates a re-creation based on the time the pit was in use beginning at this end and moving this way with the pit, what was put in there and where roughly it's placed.

This chart is a cross section of what you would look at -- this is an aerial view looking down to see where the pit is located. Looking from the side, this is what you would see. The practice was to dig down to the basalt layer, the hard layer of rock approximately twenty feet down at the Radioactive Waste Management Complex.

Once you got to this basalt layer you would -- they would place a soil layer or an underburden on top to act as somewhat of a barrier prior to placing the waste in. In Pit 9 there is roughly three and a half feet of underburden and then roughly eight feet of waste, the waste consisting of barrels and boxes stacked much like this as well as other numerous stuff.

If you look at this, we've got inactive reactor vessel parts. We've got empty pickup beds, anything contaminated and considered radioactive waste mixed within this area, as well as some soils were mixed in to -- I don't know if you can see it. As you put the barrels in, if you fill in dirt, the dirt would then come down and intermix throughout the pit. Then on top of the active waste a six foot overburden was placed to make the waste isolated from workers at the Radioactive Waste Management Complex.

That's briefly what Pit 9 is and what it looks like and how it's situated. Now we're going to get into why are we cleaning up Pit 9, what are we trying to accomplish.

Two reasons we're proceeding with this action the way we are -- the first is, as I mentioned earlier, Pit 9 waste contains hazardous and radioactive constituents.

As stated in the proposed plan, those constituents are no longer within the confines of the subsurface disposal area. Let me -- there's evidence that the organics -- the volatile organics, the carbon tetrachloride and trichloroethylene, are moving outside the confines of the subsurface disposal area in a downward motion. We also have monitoring and sampling data that indicates that plutonium is below the subsurface disposal area.

So what I'm saying is that what was -- what we thought was in here is now slowly moving out. So we want to eliminate Pit 9 as a source of those contaminants moving and contaminating the area below the subsurface disposal area and possibly causing contamination of the Snake River Aquifer, which is -- on this chart would be about six hundred feet down from the surface.

The other thing we're trying to accomplish with Pit 9 is to perform an interim action, an interim action being that action that leads you toward a final action or a final closure of this site, this site being the subsurface disposal area, roughly an eighty-eight acre site that has radioactive and hazardous waste buried throughout.

By attacking Pit 9 we're taking one step towards cleaning up the entire site. We know the most about Pit 9 because it was one of the last pits operated, and the information that we have we feel is pretty accurate. It gives us a good indication what is in the pit and how to quantify the risk of what's in there.

It's located in this area of the subsurface disposal area, which is right on the edge. It's kind of isolated from the other parts. And it's a -- it allows us to find out if the technologies proposed and the processes that we're proposing to use will actually work so that we can clean up the entire site. We've got to start somewhere, and we've determined Pit 9 is the place to start.

Now, how are we going to clean it up? That's the next step. In the proposed plan we identified five alternatives. Now, this is going to get kind of confusing because I'm going to jump around a little bit. Some of the questions we got from the last public meeting and from the last process was how did we involve the proposed plan and a request for proposals document.

Now, a request for proposals -- let me -- request for proposals being we issued a request to private industry to say we would -- here's our problem, Pit 9. We would like you to come in and clean it up. Propose to us how you think that should be done. Now, that entity -- Fred's going to talk about the companies that submitted proposals and what those proposals were in a second. All I want to hit on is that was a separate process than the CERCLA process.

Under the CERCLA process we as the agencies -- the state, the EPA, and Department of Energy -- sat down and said here's Pit 9. How can we clean this up to accomplish our goals of eliminating Pit 9 as a source of risk while continuing on with total site cleanup.

We came up with what we thought were five alternatives that could accomplish that goal. Those five are listed here. We then determined based on the criteria in the -- the evaluating criteria as to how you evaluate these which one was the preferred alternative.

The alternatives that we selected as being possible ways to perfrom the cleanup were no action, in-situ vitrification, ex-situ, the preferred alternative of physical separation/chemical extraction/stabilization and then complete removal.

Fred is going to go into this in a lot more detail. Briefly no action implies that at the present time under an interim action we would do nothing. In 1998 when all of the TRU pits and trenches in the subsurface disposal area -- 1998 is time when some decision has to be made as to site cleanup for all of these. If we determine right now no action is the alternative, we would do nothing until that decision in 1989 and address all the pits and trenches.

In-situ vitrification is a process where with the waste still in the ground you use high electricity. The heat from the electricity melts the waste and the soils and the -- what's in between the electrodes and turns it into a solid glass-type mass, in-situ being it's done in place in the ground.

Ex-situ is a similar process except that we have to excavate all the waste first. We dig the waste up and have to put it into a processing unit that vitrifies it similar to this process with the differences being the differences between doing it in the ground or doing it in your melter.

Complete removal, storage, and off-site disposal consists of digging up or excavating the entire contents of the pit, running them through some kind of treatment process or repackaging process -- to repackage it and make it safe for storage and then storing it until some disposal -- some treatment and disposal of that waste can become available.

Again we as the agencies determined that physical/chemical/stabilization was the best because that achieves the goals of reducing the risk associated with the site, reducing the volume of waste that would have to go into the ultimate storage and is the most -- meets our goals of a ninety percent reduction in volume as well as mobility with the stabilization factor added.

Now, we're ready to get into specifically what is the preferred alternative. Our preferred alternative is physical separation/chemical extraction/stabilization. We've got two companies, Lockheed and Waste Management, who have submitted proposals on how to clean up Pit 9 using these specifics.

I'm now going to let Fred walk through how these systems work and why we think they're a good choice for Pit 9.

MR. HUGHES: Thank you, Jim. One of the most frequent questions asked and the comments that you made during the last round of public comments was how do you expect us to give you any reasonable sort of judgment on your preferred alternatives when we haven't heard anything about the technologies that you're thinking about.

What I want to do is talk to you about two technologies that we're considering, how the project is structured, and how we went about selecting the companies that you see in front of you tonight.

First of all what we did is late last year we issued a request for proposal to private industry. We said we have a problem. We want you to clean up Pit 9. We didn't restrict them to any of the technologies that are listed there. We said tell us what you can do. Right before the proposal was issued we got roughly eighteen teams that said we're interested; send us the proposal. The proposal was issued. We got three responses back. Of those three responses two were judged to be technically competent and equal.

The way we judged that is we had a source evaluation board put together of experts, an expert in chemistry, an expert in processes, an expert in production, an expert in operation. And this panel went and reviewed the three proposals, and they had some criteria. They had to judge whether they were technically feasible doing what we asked them to do, whether they understood the complexity of the job, and whether they thought they would have success at doing it. The board did their review, and they came back and said we have two teams, Waste Management and Lockheed.

We structured the project, and what you'll see both companies offering are processes that allow us to do several things. First of all, we want to do this project safely. We want to make sure that you're protected. We want to make sure the workers at the site and the workers on the project are protected. We want to make sure that the environment is protected.

Second of all, we want to make sure that the technology used is proven. You'll see that in a few minutes, how we go about doing that. Lastly, we want to make sure we do it in a cost effective manner. We don't want to waste your money.

The way the project is structured right now is in three phases. The first phase is a proof of process test. In this phase both companies have to demonstrate critical integrated aspects of their technology that they propose to use. They have to demonstrate them in controlled environments. They have to pass stringent criteria that we've established, and they have to do it at their facilities.

They have to pass all the criteria in order to continue to go on to the next phase. That's how we're going about proving that the technology works before we put it out on the site and uncover any waste.

As a result of this phase we're going to review the processes, the test results, and we're going select the best technology that we think will do the job for us. During the second phase it's a limited production test. During this phase the company that is selected will go out to the site and erect a containment building over the pit. They will install a full scale process, and they'll do limited testing.

During both phases, phase one and two, the testing will involve substitute material for the radioactive components. We're not interested in contaminating the equipment before we're ready to uncover the waste. We want to demonstrate the processes in a safe manner. They'll do limiting testing at the site. They'll demonstrate that their full scale equipment works. And then they'll receive permission to go to the last phase, which is full production. That's where the pit is cleaned up.

So there are two gates that we must go through. There are two checkpoints that we have to pass through in order to get to the last phase.

What I would like to do now is walk you through the two processes that have been proposed. What I hope you'll see is that they're pretty simple in nature as far as flow and what they're trying to do. However, what you'll also see is that each box up here represents upwards of fifteen sub-boxes that comprise the overall process identified.

First I'll start with Lockheed. What you'll see in both cases is that they're broken down into three main phases -- physical separation, treatment, and stabilization. What Lockheed has proposed to do is in the containment building they'll use robotics, remote operated equipment. And they'll segregate the waste at the dig face into waste streams -- large items, the reactor vessel that Jim mentioned, nonsoil consisting of Rocky Flats sludge, the glass and the metal and contaminated soil.

What they do with the large items is they leave them in place. If it's determined that it has to be decontaminated, they'll do that inside the pit. They won't pick these items up, move them outside the pit and then return them. For the nonsoil materials, the sludges and the glass, they send them to their thermal treatment process.

In Lockheed's case this thermal treatment process is the critical aspect of their process. That is one area that we are asking them to test as part of the proof of process phase. The contaminated soil goes into the chemical treatment. And there's three things that happen primarily in this phase. The organics are stripped out, and they're sent to the thermal melter. In addition, the soil is separated by size. Smaller sizes less than ten microns are sent to a chemical leach using nitric acid where the TRU material is stripped off and sent to the melter.

The larger soil after it's been separated is directly sent to the melter. What you should notice is that in various steps of the Lockheed process they are constantly testing to see what material is clean, what material meets the return to pit criteria. They are separating that out. They are trying to concentrate the hazardous material down into smaller and smaller volumes.

The last phase is the stabilization phase that Jim mentioned. They use a plasma melter that heats the material to three thousand degrees Fahrenheit roughly. It transforms the material into a glassified material something like obsidian. And they do a final sort, and the concentrated hazardous material goes to storage. Any gases that are generated are treated through an off-gas system, monitored before they're released to the atmosphere.

In Waste Management's case they have a similar stepped process. Physical separation, they too do that in a containment building. They use a lot of robotics and remote operating equipment. They also separate the waste into various waste streams at the dig face -- large items greater than two inches, because their process can't handle material greater than two inches -- and less than two inches. The large items they propose to reduce the size in the pit and decon it if necessary.

Same with material greater than two inches. They will shred it, reduce the size, decontaminate it inside the pit.

The material that's less than two inches, which is primarily your soils and your sludges, they propose to send it through a complex chemical process. This is their critical part of the proposed process. This is what we're asking them to demonstrate during their proof of process. In this phase they do several things. Their main objective is to take all the solid hazardous material like the TRU and the nitrates and the organics and to get them into a liquid form.

Once they've done that they send it to an evaporator where the hazardous material is concentrated. Any material that is evaporated is sent through an off-gas system similar in nature to Lockheed where it's treated, monitored before it's released to the atmosphere.

The concentrated hazardous materials that contains your TRU, your organics are sent through stabilization processes and sent to storage. You'll also notice that they also sample at various stages for clean material and material that can be returned to the pit. They also are trying to reduce the volume of hazardous material that ultimately ends up in storage.

What we are trying to do is do this job in a safe manner using proven technology. So we're going to demonstrate the processes in controlled environments before we tell them they can go out to the pit, uncover the waste, and treat the waste at the site. Don.

MR. MACDONALD: Again two points before we open it up for questions. TRU, whenever we're talking about TRU, we're talking about transuranic waste, plutonium and americium. I think we mentioned that up front, but I want to be clear that people understood what TRU was.

I guess that was really the only point I was going to make. At this point we would like to go ahead and open it up for questions that anybody in the audience may have about what we're doing.

We've got two mechanisms for getting questions answered tonight. You can stand up, ask your question verbally. Or if you prefer not to do that we've got people stationed around, and we have some three by five size cards that you can write your questions down on. We'll have those picked up and read the question and then answer the question on the card. So it's your option. For those of you that prefer not to stand up and ask the question verbally you can write that question out. So questions please. Yes, sir.

UNIDENTIFIED: Have either of these processes been tested in the lab? Do we know that there is a workable way to do this before we go into spending all the money out there to make these tests that we're talking about? Have these been tested in the lab?

MR. HUGHES: I'll let -- my technical expert is Dr. Kolts here. I'll let him answer part of it. Let me first respond by saying that in that first phase that I mentioned, the proof of process test, that they are demonstrating that process using their own money, and only when they pass that test will they be reimbursed up to a ceiling of eight million dollars. So we're not spending the government's money to develop these processes. They have come to us and said we're going to demonstrate them. We're going to use our money, and when we pass then you can pay us.

I'll let John answer the other part of the question.

MR. MACDONALD: This is John Kolts. He works for EG&G. He's the technical adviser to the department manager EG&G for environmental restoration and waste management.

DR. KOLTZ: Let me repeat the question. You're concerned that these processes have been tested prior to being used here. The answer is, yes, they have been tested as individual processes all over. This chemical extraction system that is referred to right here (indicating) was developed in England. Evaporative concentration has been used in hazardous waste sites in several locations in the states.

Catalytic oxidation has been used in thermal processes in various treatments by a lot of different companies. This solvent extraction system is well known. This chemical leach is nitric acid that has been used in the mining industry. This thermal treatment is based on a system that is up in Butte, Montana, as well as a waste disposal site in Switzerland.

Where they have not been used is as integrated systems where we've taken all of these components and put them together. They have also not been used in a highly contaminated plutonium environment inside a structure. So what we're going to do is take these individual processes that have been used before. We're going to ask the companies to come in, put them together at pilot plant scale and to demonstrate them to us that they will work as advertised as an integrated system.

MR. HUGHES: Someone wrote this question: Since the companies have been selected prior to the record of decision, how can the agencies claim that public comment will influence the decision? Is there a financial penalty if alternative four is not selected due to public comment?

The way I would answer that is there are two critical things that must happen for this project to go on to phase two and phase three. First, the companies have to demonstrate that their process works. If that doesn't happen, then we don't go to the remaining phases.

Second of all, the other important thing that has to happen is that we have to receive comments from you on what you think about the alternatives, the two technologies, the way the project is structured. If after receiving the comments the agencies determine that the preferred alternative is not alternative four, then we don't go to the remaining phases. They may decide that one of the other technologies is viable and then come out to you again for more public comment.

But those are the two critical things that have to happen. So it's not like your public comments are ignored, that we've already selected the teams and we're just going to go ahead without taking into account what you the public think.

MR. WADE: I've got a card here that's got a few questions on it. I'll start with the ones I can get and some we might -- the first question is: Where will the americium and plutonium that's not reburied at the Radioactive Waste Mangement Complex go? And the follow-on is: And when?

Right now there is no disposal facility available for the americium and plutonium that will not be reburied into the pit. It will be placed into interim storage at the Radioactive Waste Management Complex in a permitted storage module. The advantages of doing this is that we bring it out of Pit 9 in an uncontrolled environment and put it into a controlled, monitored environment where we can monitor it safely.

The and when part of that is again unknown because currently right now there is no ultimate disposal facility for americium and plutonium.

The next question is: Legally can't you rebury it all by reducing its concentration? Dean, do you want to answer that from a legal standpoint?

MR. NYGARD: One more time.

MR. WADE: The queston is: Legally can't you rebury it all by reducing its concentration?

MR. NYGARD: Well, the answer to that is no. Once the waste is excavated it would have to be treated. Because the waste came from Rocky Flats, and the waste contains solvents, which are regulated under the Resource Conservation Recovery Act and state hazardous waste laws. So it would be illegal to excavate the waste and place the waste untreated back into the pit. Is that the question, Jim?

MR. WADE: I think the question is hitting to -- and correct me if I'm wrong -- can we dilute to meet the cleanup standards and redispose of everything within the pit. The question is: Legally can't you rebury it all by reducing its concentration?

MR. NYGARD: Well, if you reduce its concentration down to the point -- at least for hazardous constituents and not the radioactives, you can reduce it down to below levels at which we call in the regulatory world delisting levels. These wastes are on a list of wastes that are regulated. It is possible to get them taken off that list by treating down to, you know, minimal concentration levels which have been determined in the regulatory arena to be of no consequence to human health and the environment. And it's commonly referred to as delisting. So that in fact can be done.

MR. MACDONALD: Let me clarify something here. I'm not sure if this is where the question may have been headed.

The effort here is not to dilute the waste and put it back into the ground. What we're trying to do is take what amounts to what we estimate to be about twenty-two kilograms of plutonium spread throughout a certain volume of waste and the materials besides the plutonium -- the materials that we can destroy -- the volatile organic compounds and those sort of things -- that's what these processes are basically intended to do is destroy them as chemical substances which now exist which are hazardous and render them nonhazardous.

What we want to try to do is end up with -- instead of a hundred fifty thousand cubic feet of contaminated waste what we want to end up with is about -- is a much smaller -- we're shooting for a ninety percent reduction in the volume there, a smaller volume of waste that contains the materials that we can't destroy.

So we're not trying to dilute -- the systems are not designed to dilute waste to be able to rebury it. They're designed to concentrate the risk materials into a small volume so that those can be better managed and we can put them into a location where they're not -- a controlled location where they don't pose a risk; i.e., they're not left buried in the ground. So I'm not sure if that helps clarify that or not. We're not trying to dilute the material down and rebury it.

MR. WADE: The next question on this card is: How will harmful dust be controlled within the containment building? We're going to let John Kolts answer that one. John please.

DR. KOLTZ: The buildings -- the first thing that's done is they're going to build a building over this pit. And this building in effect has a building inside of a building. They've got a primary barrier and a secondary barrier. The inside of this building is, number one, kept at a pressure that is lower than the outside. So if there is a leak, the leak will be from the outside in, not from the inside out.

In addition, there's a heating and ventilation air conditioning system that turns over the air in this building several times an hour. And this air that is being filtered just like the heater in your house runs through a filtration system of special filters that pulls out dust and holds them in place.

In addition to that, there are air monitors that monitor for dust, for radioactive materials, and for hazardous materials. So if any of this material makes it through the system as the air is being recirculated, an alarm goes off and the system is fixed. Okay.

In addition, any air that happened to come out of the system is also highly monitored, and the system is just redundant through and through and through to make sure that no dust, no radioactive material, or no hazardous organics is let out into the environment.

MR. WADE: Thank you, John. The next question is: How much americium and plutonium will you rebury at the RW -- at the Radioactive Waste Management Complex, and how is this amount determined?

Right now we're not sure how much americium and plutonium will be reburied. We know there's approximately twenty-two kilograms of plutonium within Pit 9. Our goal is a ninety percent volume reduction in the amount of waste that's contaminated with those transuranics. However, again that's our goal.

We're not sure -- because we haven't done the proof of process tests yet -- what these companies can accomplish in the way of bettering that goal. So the exact amount is undetermined. It will be determined through the proof of process test and through the limited production test to tell us how efficient the technologies are. It will, however, -- the technologies will have to meet our ninety percent volume reduction goal as stated in the proposed plan.

Now, the next question and last question on this card is: The 1980 executive summary for the Waste Isolation Pilot Plant's environment impact statement says there's, quote, no suitable geology in Idaho for burial of long-lived radionuclides, end quote. Please explain -- I think this is why -- explain why you're doing -- why you're going to do it.

The Waste Isolation Pilot Plant environmental impact statement was based on -- and this particular quote -- no suitable geology in Idaho for burial of long-lived radionuclides was based on the transuranic waste definition, the definition of a transuranic waste being greater than one hundred nanocuries per gram of transuranic material.

The material we're talking about redisposing in the pit would be less than ten nanocuries and therefore does not fit the definitions that this particular document was discussing when it talked about no suitable geology for the disposal of transuranic waste. The less than ten nanocuries per gram limit is protective of human health and the environment, and that's why it was established as a cleanup level.

MR. MACDONALD: I've got four questions here that are similar, related questions. The first one: Since this cleanup is not required to reduce risk and therefore is not required under CERCLA, why is environmental restoration money rather than Office of Technology Development money being used?

We are looking at risk reduction with this interim action at Pit 9. We know we have volatile organic compounds moving out of Pit 9. Monitoring -- we've got monitor wells around the perimeter of that pit, and we know we have materials moving out of there.

One of the goals you undertake in environmental restoration -- a key thing you do is you want to implement source control wherever you can do that, i.e., control the source of a contaminant, remove that source so that it no longer is allowed to release contaminants to the environment and stabilize that material. That's the objective with Pit 9. It's fundamentally a source control measure to make sure that no further substances move out of the pit. And because of that -- that is an environmental restoration agency activity or task therefore.

The next question: At the last meeting it was stated that a base line risk assessment would be completed prior to the start of the project to determine cleanup levels. Why hasn't the base line risk assessment been completed?

I believe what was discussed at the last set of meetings was that we would do a residual risk assessment to determine what appropriate cleanup levels would be, and that residual risk assessment has been done. That document talks to the ten nanocuries per gram cleanup limit that we -- has been proposed in this plan. That document is available in the administrative record, and for anybody who wants to see that, administrative records are located in Idaho Falls, Pocatello, Twin Falls, Boise, and Moscow.

If you want specific information on where within those communities, let us know. But it was -- we did a residual risk assessment in terms of defining what amount of material that would be put back into the pit would still be protective of human health and the environment.

The next question: The proposed plan states the criteria for residuals returned to Pit 9 will be based on an industrial scenario of less than ten to the minus four carcinogenic risk or one in ten thousand carcinogenic risk. Yet the proposed plan also says that the preliminary risk evaluation does not reflect conditions at Pit 9, and no subsequent or base line risk assessment has been prepared. How will the ten to the minus four be established?

I think -- I'm not quite sure I understand all of that question. What we've talked about -- but I'll give it a a shot here. What we've talked about in this proposed plan is that we're saying that ten to the minus four carcinogenic risk is what that ten nanocuries per gram is based on; i.e., if we meet that, we pose no -- there is no risk greater than ten to the minus four level. And that was prepared -- or that level was established by doing modeling in terms of the transport of any materials left within that pit, which again are principally the -- any americium and plutonium at less then than ten nanocuries per gram.

Would that pose a risk if redeposited in the pit?

And the modeling shows that there would be no risk greater than that ten to the minus four number by leaving that amount of material in -- that amount of activity within Pit 9 when we were completed.

I'm not sure if that answers that question directly. If it doesn't -- if you want to submit a follow-up, we'll be glad to take that.

The last one -- I think Dean and Earl may have to help address this: As the reason for this interim action is to expedite total site cleanup, can we assume that the state and EPA recognize that cleanups to the ten to the minus four criteria without a base line risk assessment represent the final cleanup?

What I would offer for that is from my perspective -- and certainly if Dean or Earl want to elaborate on that or provide a perspective of their own for their agencies, they can do that. This is an interim action that we're taking. It's not a final action.

The final disposition of Pit 9 will be handled through the record of -- final record of decision for the transuranic contaminated pits and trenches operable unit, which is a mouthful. That final record of decision will not be issued until 1998. That will be after the completion of a remedial investigation and a feasibility study for all of the pits and trenches that contain transuranic materials at the

RWMC. There will be a base line risk assessment associated with that RI/FS, and that will back up the final determination on what's going to happen with all those pits and trenches, including Pit 9.

We have done a residual risk assessment, as I said, on Pit 9 that shows that at the ten nanocuries per gram level we're being protective of human health and the environment in terms of material that remains within that pit.

So we're anticipating that this is a final cleanup. However, the record of decision on this interim action does not represent the final action or the conclusion of this action, and it is subject to be revisited in that record of decision for the transuranic contaminated pits and trenches.

Dean or Earl, if you want to offer anything more since they were asking if you basically bought into this I think. So --

MR. NYGARD: Yes, we do recognize that the ten to the minus four level is an acceptable risk number. It's in the NCP, the National Contingency Plan, which is the implementing regulation for superfund. We recognize that. In fact, there is a little discussion of that in the action plan in the Federal Facility Agreement and Consent Order about interim actions. And the goal of the interim action is not only for streamlining or expediting cleanup, but also to accomplish where we can final cleanup objectives.

It's only prudent to think ahead. In doing that it's wise from a number of perspectives. We're out doing the work, spending the money. Let's get the bang for the buck. Do the job right the first time. So in fact that is a very good, key, important component to the efforts in progress that we're making today is to use these interim actions for those purposes.

If I could, could I go ahead and do one more?

MR. MACDONALD: Sure. Go ahead.

MR. NYGARD: This is a follow-up question on the dilution issue we just discussed: Based on Mr. Nygard's comment, I'm assuming that dilution to meet treatment cleanup standards is acceptable. Please clarify.

The key here is, dilution is not treatment. If I said that, came across that way, I certainly did not mean that. Dilution is not treatment. Treatment is a physical, chemical, or biological alteration of a waste as opposed to mixing it with clean material and spreading it hither and yon. So dilution is not treatment.

The other question if I may, this regards the tri-party agreement, reads as follows: The tri-party agreement involves state, EPA, and DOE, but now that we are revisiting the Pit 9 alternatives should we not bring the

Indian council in on this as we now have an understanding of oversight with you that we previously did not?

This is an inquiry not in the form of an implication of a needed requirement. Somebody who may have -- I know that there's -- just a while back there was a memorandum of understanding agreement reached with the tribe regarding oversight at INEL. I saw something to that effect but I -- to be quite honest with you I've not read it, did not understand it. I'm not aware of any implications it has. If anyone has some more information on that. I would also be happy to discuss that with the person who generated the question during the break.

MR. HUGHES: I overlooked one part of the earlier question. Is there a financial penalty if alternative four is not selected due to public comment?

There is no financial penalty if selective four is not selected as the preferred alternative.

MR. WADE: If I can expound on that quickly, I tried to get into it earlier in the presentation, but we've got two separate processes here. We as the agencies have determined that the preferred alternative -- physical/chemical/stabilization -- is the way to clean up Pit 9. We're coming out for public comment on that preferred alternative as well as all the alternatives identified in the proposed plan.

The determination of what technology or what alternative will be used to clean up Pit 9 will be made in the record of decision that is currently scheduled to be completed in March, 1993. So the record of decision determines how we're going to clean up Pit 9, based on the alternatives here or some other alternative that we perhaps haven't identified.

The contracting phase is a separate phase. The proof of process test will be completed to prove if these technologies can meet the cleanup criteria identified. However, if we determine as the agencies that alternative four is not the preferred alternative, what we've done -- or is not the alternative selected in the record of decision, what we've done from the contracting side is merely at that point prove that these technologies either work or don't work. And based on what Fred said we then pay or not pay based on if it's a successful completion or not. But that doesn't tie us to use those technologies in the cleanup.

And what we determine in the cleanup is the best technology or best alternative doesn't tie us to using one of these two particular companies for the cleanup activities. They're independent entities that are related at the beginning because we want to clean up Pit 9 and at the end if alternative four is selected and if these companies can pass.

MR. HUGHES: Will the responsiveness summary address comments from the earlier comment period as well as this comment period?

One of the reasons we issued the revised proposed plan and we're having these round of public meetings is your comments said we need more information on the technologies. So we reviewed your comments. We took them into account when we were coming back to address your comments.

We also took your comments into account when we prepared the proposed plan. To answer you directly, both sets of comments, the earlier one and this round, will be included in the responsiveness summary that will be issued with the record of decision.

Another question: The handout on the Pit 9 cleanup plan makes no attempts to explain the Lockheed and Waste Management cleanup proposals and how they would work. Since so many of the questions about Pit 9 revolve around the companies' proposals, can the agencies make available a detailed written report on the cleanup proposals? If not, why not?

I believe that in the administrative record is a white paper that provides that description of both proposed technologies. I will verify that it's in there, but that white paper should answer any questions regarding the details of both technologies that have been proposed.

MR. MACDONALD: If people have some -- if there are perhaps some detailed questions about specifics of processes or something, --

MR. HUGHES: Feel free to --

MR. MACDONALD: -- ask them. We'll try to get them answered tonight if you want. So --

MR. HUGHES: Yes, sir.

MR. JACKSON: I'm Tim Jackson with the Idaho State Journal. I have a question about the flow chart. Where does it show the americium and plutonium at greater than ten nanocuries per gram coming out of that process, and where does it show the americium and plutonium at less than ten nanocuries per gram concentration coming out of this job?

DR. KOLTZ: Clean soil is assumed to be less than ten nanocuries per gram.

MR. JACKSON: Okay.

DR. KOLTZ: Greater than ten nanocuries per gram goes to TRU storage, long-term storage.

MR. WADE: That's the same for both processes also.

DR. KOLTZ: Same for both.

MR. WADE: Use the same acronym.

DR. KOLTZ: Clean is assumed to be less than ten nanocuries, and there's your TRU storage.

MR. HUGHES: Yes, sir.

MR. SNYDER: My name is Ed Snyder. Everybody here seems to be so concerned about the radionuclides. I was a former employee of Shell Chemical, and I used to be up to my elbows in such things as xylene, acetone, toluene, and I'm a lot more concerned about that than the rest of the people here seem to be.

I'd like to know whether or not the carbon tetrachloride and any of the other solutions that were used that ended in e-n-e were kept in barrels. Are the barrels leaking? Is the stuff seeping into the ground? And if it's freely leaking, how do you propose to go about getting it, getting all of it up before it gets down to any aquifer or any water contaminants?

MR. MACDONALD: The material that was shipped from Rocky Flats was not shipped -- the volatile organic compounds or any of the organic compounds -- I shouldn't say any of the organics, but most of that material had been shipped and had been absorbed in some sort of absorbent material before it was sent up here. But there is evidence -- we do know that we have organic compounds that have been released from pits and trenches, including Pit 9. And they are -- we do find them in a vapor phase underneath the RWMC.

We're looking at a two-phased approach on how we're going to deal with those compounds. One prong of that approach is source control such as Pit 9 where we go in and remove potential source materials. And in this case what we're looking at doing with those VOCs that -- toluene, xylene, the carbon tetrachloride, the TCE, et cetera -- those will be physically destroyed in these processes.

For the material that's already been released, we're currently in the process of doing a remedial investigation and feasibility study that's -- to address the organic contamination that's been released into that vadose zone. The vadose zone is the area between the surface soils and the aquifer. It's the unsaturated zone between surface and aquifer.

So we are in the process of trying to address the materials that have already been released as part of the overall strategy on how we're going to clean up the Radioactive Waste Management Complex.

At this point we should have a record of decision on how we're going to address those materials about fifteen months from now. We are going to be doing a treatability study over the winter with the vacuum extraction type of system to see how well suited it may be to removing those materials that have already been released. So those are a concern for us also.

MR. HUGHES: One question submitted was: What is your proposed schedule and duration for each of the three phases?

First phase, proof of process, is scheduled to last one year. The second phase, the limited production test, right now is projected to last from eighteen to twenty-four months from the completion of the proof of process test. And the final phase where they go in and clean up Pit 9 is scheduled to last for approximately one year. So we're looking at sometime near the end of 1996 for the project to be completed.

MR. MACDONALD: One clarification on that. Limited production test, when he says eighteen to twenty-four months, that time period includes the time -- if we go this route -- that the selected company will come on site, erect that facility, and get it to an operational state where it can do the actual physical test, run materials through it to verify that it will work at full scale. So that LPT test process would be completed with that eighteen to twenty-four month window.

I have a question here: The RWMC has a forecasted, quote, limited, unquote, life. Has there been any thought to applying waste volume reduction processes to this alternative to extend the life of the RWMC and prevent the relocating or creating a new complex -- or creating a new complex in the near future? And in parentheses 2015.

The process we're talking about here is a process to deal with the materials that we find in Pit 9. Whatever materials we extract out of Pit 9, put through these processes, anything that meets the cleanup criteria can go back into the pit would be done so, and we would put it back into Pit 9.

However, we have no envisioned use for Pit 9 following that. The pit will be filled back in to grade, vegetation placed over the top, and consider it closed for our purposes. We're not looking at this -- at the cleanup program at the SDA as a means to extend the life of the RWMC by removing material out and allowing more space for other disposal.

Personally I'm not aware of what the long-term -- what the scheduled lifetime is of the RWMC in terms of low level radioactive waste disposal. We can get that information for you if you're interested if you want to see us after the Q and A session. Or write some communication to us. We'll try to get you that information on the life and future expectations of the RWMC.

MR. WADE: I've got two here: Pit 9 is a one-acre site -- one acre in size with an estimated remediation cost of one hundred twenty-seven million dollars. Extrapolate this to eighty-eight acres of the subsurface disposal area. Will it eventually cost eleven billion dollars?

The answer is no. We're learning by doing the proof of process test and the limited production test. And then constructing this particular technology at the RWMC at the site will cut the cost -- if this technology is successful in cleaning up Pit 9 -- to be used at other sites. We won't have to go through the proof of process test. We won't have to go through the limited production test and the construction. We would already have a facility there available for use. So it would merely be the operating cost of that facility. We haven't extrapolated that to come up with what that number would be, but it would be somewhat less than eleven billion dollars.

The other part of this question is: Does the AWC Lockheed -- or does AWC Lockheed intend to use TRU-clean, a separation method that had mixed results on Johnson Atoll?

The answer is, yes, they do plan to use the TRU-clean process. To respond a little bit to the mixed results portion of the question, that's why we're having them do a proof of process test. It is a technology that they have used elsewhere. We want to know -- prove to us how it's going to work on the constituents in Pit 9 and on this type of pit.

MR. HUGHES: Are the state and/or the EPA involved in technology evaluation POP and the limited production phases?

Both agencies have been involved in great detail throughout the project to date. They've received a lot of briefings on the two technologies. They've been involved in the decisions that have been made on the project. They will continue to be involved in the project at all the stages, both the proof of process and the limited production test. They will get the data. They will be able to evaluate it.

MR. MACDONALD: Want to add anything to that, Dean or Earl?

MR. NYGARD: Yes, I would. Since this project is being conducted under the Federal Facility Agreement and Consent Order, what we're looking at from here on out with this interim action is that we are participating in the remedial design and remedial action portions of it.

So now we're down to the details of what the actual remedial design and the scope of work is going to look like that is a required document under the Federal Facility Agreement to set out some time lines and types of documents and design documents to be submitted for state and EPA review.

Upon receipt of all that, however, it's very important to be aware that where we go from here is the record of decision, which in fact is a big part -- big document that actually sets this whole thing in motion in terms of is this -- is this the alternative we are going to proceed with. And that's dependent on a number of factors, including community acceptance of the preferred alternative.

So that's where we're going. We will be involved.

One of the advantages of having this project as an interim action of the Federal Facility Agreement and Consent Order is that we are involved all through the process. Otherwise I think if you look at the national experience and trying to get innovative technologies implemented outside of the superfund process or Federal Facility Agreement process you'll find that it's probably dismal because of the lengthy various permitting processes that one would have to go through to run a project of this size.

That's been a significant drawback in innovative technology development is to get out and do it actually on a real site using real waste at a large scale requires lengthy permitting processes that at both state and federal level are very cumbersome and oftentimes very large impediments in proceeding this way.

That does not mean that because we're doing it under this process that we now have all these shortcuts and avenues that we can take to ramrod this thing through and to heck with all the regulations. What it does mean is we have a Federal Facility Agreement and Consent Order to consolidate all of those processes so all the issues regarding permitting and how the state and EPA and DOE are going to cooperate on this project. All the regulatory aspects, those things have been consolidated and we have a framework for working within and also resolving any disputes that we may have along the way.

So that's a real advantage to having this project as an interim action, and I think it's -- it speaks very well of INEL to come out with a bold proposal. When you look at a nationwide perspective of this, people in other states are not having these kinds of successes. So that's -- that's it in a nutshell.

MR. MACDONALD: The next one I've got here, it says: Since most of the environment restoration projects which have completed a base line risk assessment have gone to no action as a final action, why does DOE continue to pursue multimillion dollar interim actions without completing a remedial investigation to adequately evaluate the risks and thereby complete the action as a final action?

The Federal Facility Agreement contemplates several possible courses of action on any given waste site. One of the precepts that the agencies have used is that in cases where a risk from a site is readily apparent or obvious, we feel it's incumbent to go ahead and address that risk through the use of interim actions or potentially removal actions, things where we try to expedite a lot of up-front paperwork and not spend a lot of money analyzing something that we can readily discern is a risk and go out and better utilize the money to effect a cleanup.

So we have -- if this project gets underway and we have a record of decision, that leaves us with three interim action records of decision, one for Pit 9, one at Test Reactor Area to clean up sediments in an evaporation pond there, and one at the Test Area North to clean up contaminated ground water.

So those are areas where we want to move out promptly because we know we have a problem at those areas.

Areas where we have -- where it is not as easily discernible, we go through that entire process to determine what is a risk. Is there enough of a risk to pose an action? And we currently -- the two records of decisions I just mentioned at the beginning of the meeting that have just been signed in September, those in fact were no actions because based on that base line risk assessment it was determined that no action was necessary.

These interim actions that were undertaken, Pit 9 being the one we're talking about tonight, the goal is to make sure that the action we take will suffice as a final action. When we get to the point where, as I mentioned before, the base line risk assessment is completed in 1998 for all the pits and trenches that contain transuranic materials -- that the cleanup we've done on Pit 9 will prove to be effective and we'll know the pit does not pose any risk because of that cleanup.

So we look to have this action meet the goals and objectives that we would set out in the final record of decision.

MR. HUGHES: Doesn't Lockheed's proposal represent alternative three, ex-situ vitrification?

In truth the stabilization part of Lockheed's proposed process is similar to the ex-situ vitrification alternative. They both propose using a melter. They both propose taking waste out of the pit and feeding it into the melter. The significant differences are that in Lockheed's case what they're doing is a lot of up-front work to concentrate the hazardous material to reduce the volume that has to be treated in that melter.

In the alternative three case, the ex-situ vitrification, what's being looked at is you dig up the entire contents of the pit and you send the entire contents of the pit into that melter to be processed. So even though Lockheed has a component that's the same as alternative three, there is a big difference between the two.

And some of these questions, John, I need your help on. Are the surrogate compounds used for waste present in the same atomic abundancies and are the mineralogical phases the same?

DR. KOLTZ: Read it again.

MR. HUGHES: Do you want to look at it? Maybe it's better if I read it.

DR. KOLTZ: Showing my age, right?

MR. HUGHES: Are the surrogate compounds which are used for waste present in the same atomic abundancies, and are the mineralogical phases the same -- I think as in the radioactive.

DR. KOLTZ: Let me go in steps. For the POP test there are three types of sludges that were produced at Rocky Flats. One of them is an oxide-based sludge that contains plutonium and americium. What we're going to do is have an outside chemical company prepare a sludge that is very, very similar to how it was actually prepared at Rocky Flats so that the oxidation states and the chemical components within that sludge will be as close as we can possibly get.

The surrogates that we use will also be put in there at the same concentrations based on the records that we have from Rocky. In addition, we went to Rocky Flats and talked with some of the older fellows that were there that actually made these sludges to supplement the background records that we have.

The two other sludges are sludge that's based on the organic materials that we've been talking about, and we have good compositions for those. And we are going to have again an outside chemical company prepare those. And they are going to be stabilized and placed in the exact same absorbents that were used at Rocky Flats.

The third sludge is a potassium and sodium nitrate sludge that comes out of an evaporator pond, and again we're going to have it duplicated and in the same absorbent that was used at Rocky.

Those sludges will be shipped to both contractors. Those contractors will also be shipped INEL soil from the spreading area, which is the exact same soil that was used to fill in the interstitial areas in Pit 9. So they will be using Pit 9 soils, will be using surrogates prepared like Rocky Flats prepared them, and they will be using surrogates in very similar concentrations to what Rocky Flats had in them. Yeah, I think we're doing a pretty decent job.

MR. HUGHES: Don't sit down. There's one more.

MR. MACDONALD: Talked about the radioactive, the cerium --

DR. KOLTZ: Oh, okay.

MR. MACDONALD: -- thorium, uranium.

DR. KOLTZ: In these processes the surrogates we're going to use -- in the chemical parts of the process we're using three surrogates -- cerium, uranium, and thorium. They behave very similar to the plutonium and americium that are in there. The reason we're using three is to simulate the different oxidation states that are in there.

In the laboratory, separate from the pilot scale test, they are actually going to use plutonium. So we're going to develop correlation coefficients that we can use that correlate the surrogates and real plutonium so that when we go to the large scale tests we've got good time factors that we can use to estimate what's really going to happen when we do Pit 9.

In the melter test there we will not use uranium and thorium. It's just not needed. Cerium because of its thermodynamics behaves very, very similarly to plutonium in a high temperature environment.

MR. HUGHES: Another question is: How stable is glass? Generally it's not stable geologically. It degrades or hydrates easily, releasing material.

DR. KOLTZ: There's been a lot of studies actually done here at INEL on what they call iron rich basalt. In fact, that's what will be produced from here (the plasma melter).

When they segregate out these nonsoils, they will mix in just enough soil that what comes out is iron enriched basalt that's been found to be very stable, in fact, much more stable than borosilicate glass and passes all the TCLP criteria that has been done on it.

MR. HUGHES: Thanks. If the technologies are proven, why do you need treatability studies?

Like John and I mentioned, the individual parts of the technologies have been proven at other sites throughout the world. However, what we're asking them to do is prove that integrated processes will work on the Pit 9 material. That has not been demonstrated before. So we are asking them to demonstrate that.

MR. MACDONALD: A brief follow-up on that. Nobody has ever attempted -- has ever tried to take buried waste such as we have in Pit 9 and excavate and retrieve those kinds of wastes, treat them and stabilize that concentrated waste somehow. So the specifics of what we're talking about doing within Pit 9 have never been done before.

The component pieces of how we would treat -- the treatment processes used -- as Fred said, they've been used in various applications before. It's just that coupling that's the important part. Nobody's done a Pit 9. This will be the first time it's ever been done.

We're doing that so that we try to -- I mean one of the questions it talks about a multimillion dollar -- you know, interim actions. We want to make sure -- we're doing this in phases so we can make sure we don't spend large, large amounts of money on something that is going to prove itself to -- to not work. So the step process has been thought out to allow us to make sure that the processes are in fact going to work as we believe they will.

MR. WADE: I'll read this one next because it rolls around to what Don was just talking about: What if neither proof of process is successful? How much will it cost the taxpayer to send their request for proposal out to bid again?

This is really two different answers to the same question. What if neither proof of process is successful? From the CERCLA point of view if the preferred alternative is the alternative selected in the record of decision and neither process meets the acceptance criteria, then what would go into the record of decision is the fact that while this is the preferrerd alternative the implementation of this alternative is based on successful completion of the proof of process.

If we don't have a successful proof of process test, the CERCLA action would be rolled into the 1998 TRU pits and trenches record of decision.

Now, the other part of that question is: Where are we at if we don't have a technology that works? How much will it cost the taxpayer to send the request for proposal out to bid again?

Our anticipation at this time is there would be no cost. We issued a request for proposal that went nationwide as well as worldwide because we've got international bidders on this project. We feel that the three companies that bid and the two that were ultimately selected to proceed offer the state of the art, best technology out there in the world.

If these companies can't perform this cleanup successfully, the technology does not exist at this time to do it.

We gave them the opportunity to bid, and we got what we feel is the best out there. If it's not successful, we'll roll it into 1998 pits and trenches and determine at that time what the best step to proceed is.

MR. MACDONALD: What that's going to tell us is that we're going to have to focus some efforts in the use of the Office of Technology Development dollars. It will give us some clues as to where best to focus.

Even if we successfully complete -- if these teams successfully complete the POP test, all of this action is going to help us focus efforts and focus resources on developing additional technologies or fine tuning technologies that we see that might be out there. So what it says is that we would have to -- we don't have a process that works now. It would help us though look at how to best focus dollars to get the processes that will work.

I'll go with this one: Being that the original risk evaluation for Pit 9 overestimated the risks per the revised proposed plan, page four, just what is the actual estimated risk for simply considering alternative one, no action for Pit 9?

I'd like to have Bob Nitschke talk about the risk evaluation process and the preliminary risk evaluation and where we're at with -- what the risk would be from a no action for Pit 9.

MR. NITSCHKE: Well, I guess I'll start in the beginning. There was an original preliminary health evaluation done on Pit 9. One thing people need to recognize is the risk assessment process is an iterative process. We don't try to determine uniquely the risk from a situation in the beginning. What we try to do is in a simplified manner can we identify those contaminants of concern; can we identify those routes of exposure that's causing the problem and then devote the energy in terms of data gathering, technology solutions to try to address those specific portions of what's causing the problem.

So the original preliminary risk evaluation homogenized all the contaminants both in the waste matrix and in the overburden. By doing that we did create an artificially high situation originally. So people would say, well, how can you be so stupid. Well, we are paid to do a lot of stupid things, but more importantly for some contaminants that's not unrealistic at all. Volatile organics is one of those. For the other radionuclides it was -- you know, unrealistic, but what it would do is give us an indication if that material did migrate to the surface through burrowing animals, through plants over time, we would have a risk.

We also did specifically identify once and for all for that garden variety of mixture of waste there the risk drivers were in fact americium, plutonium, and volatile organics. So what I did was provide information to the project management people on how to proceed to the next step.

One of the things they asked us to do is to determine would -- now, we recognized that we have some material that is available for release. If it gets into the environment either through the surface or the organics to the groundwater, we could have an unacceptable risk.

Would ten nanocuries per gram of the transuranic materials be protective.

So that's -- as Don mentioned earlier, there was a residual risk assessment done. And what that did do was take ten nanocuries per gram and very conservatively again homogenized that just in the waste matrix. That resultant mixture was placed back in the pit, returned to grade with a seven foot overburden, effectively isolating it significantly from any surface pathways. Very few ground squirrels go down that deep. Sagebrush to a minor degree.

And then that risk assessment showed that even when the stuff was -- stuff, the ten nanocurie per gram mixture was immmediately available through release through leaching or what have you that there was essentially no risk to the industrial worker, very insignificant risk to the future residential scenario.

Now I've forgotten the question.

MR. HUGHES: What if both proof of processes are successful? Will dollars be the only deciding factor? If not, what else will be considered? Then the last part is kind of the combination of another one: What if the best proof of process lowest cleanup level costs ten times that of the other POP? And the third question is: how is the technology shown to be cost effective?

Let me handle the first part first. If both proof of processes are successful, there are several criteria that the contractors will be evaluated against. It includes how they propose to manage the overall project, their understanding of the complexity of the project.

Second of all will be an evaluation of their technology. How much below ten nanocuries per gram does their process achieve? How much greater than ninety percent volume reduction does their process achieve? They will also be evaluated on how they performed against the schedule that's been proposed for the proof of process test, how they handle problems that come up during the proof of process, how they react to those problems. And finally money will be considered. So dollars are not the only factor that are considered when we're evaluating the two contractors.

If the best proof of process costs ten times that of the other one, or how are we demonstrating that this is cost effective?

Cost evaluation and determining how much this project costs is an integrative process. We start out with some conceptual idea. You try and attach a cost to that. As you know more and more about the processes, you refine that cost. What we have now in the proposed plan is a fairly detailed idea and a cost estimate of what we think the project is going to cost. As we go into futher negotiations with the successful team, assuming there is one after the proof of process test, those costs will be refined.

You might ask in-situ vitrification appears to be cheaper in the proposed plan than alternative four. That's true on paper, but you've got to remember that there may be the potential that we have to dig all that material up out of the pit and store it, and then the cost would skyrocket on that.

So what I'm saying is that it may not be demonstrated right now that alternative four is cost effective. However, as the teams compete, as the market forces that are naturally involved in a competition come about, as we negotiate the costs for the remediation, the cost effectiveness will be demonstrated. And that will be considered when we make the selection.

MR. MACDONALD: I've got one here: Twice you made the statement we will clean up the TRU contaminated pits and trenches, end quote. Does this mean you assume that the low level waste has no volatile organics or that you are only worried about plutonium and americium?

No, we're not only worried about plutonium and americium. Again, as I mentioned before, we're taking -- there are several different prongs overall as to how we're trying to approach overall the RWMC and the cleanup. Another separate individual operable unit that we will be investigating the wastes in it is for nontransuranic contaminated trenches.

So there will be characterization efforts underway to look at what's in those pits and trenches and determine risks associated with those. Based upon the information we have now, we don't have any information that says that we have volatile organics in those pits and trenches, but we will be doing that investigation to see. And if there are and if they are posing a problem, we will look at ways to address that.

MR. WADE: I got a card here that says: How about a break? We've got roughly about three I think -- three or four more questions. We can take a break now and hit these up, or we can plow through these and take a break upon completion.

MR. MACDONALD: It's twenty minutes until nine. I want to make sure we have adequate time for people who want to offer formal verbal comments to do that. We've got a couple options. Everything -- we've read the questions out loud and responded to them. That's been recorded by the court reporter here. That will end up as part of the formal transcript of the meeting tonight. We can take these written questions and make sure that they get addressed in that transcript if people want, or we can go ahead and answer them verbally. That's up to you.

We can do it now or we can take a brief break now.

MR. SMITH: Don, looking at the sign-up sheet, there's only one individual checked that they had some comments to make. So the comment portion may be fairly light unless you would like to get an indication now by raising hands possibly how many want to talk.

MR. MACDONALD: We've got one person who signed up for comments. Is anyone else interested in making verbal comments tonight besides that one individual? Okay. Why don't we --

MR. WADE: Let me get this one real quick in case somebody wants to leave during the break. The question is: Will anonymous comments be addressed in the responsiveness summary?

The answer is yes. All comments that are received will be responded to in the responsiveness summary and made a part of the record of decision. So --

MR. MACDONALD: Yeah.

MR. WADE: So if you've got comments and you want to do it anonymously and you need to leave during the break, please make them.

MR. MACDONALD: Let's take about a fifteen minute break at this point. We'll come back and finish these questions.

(Brief recess)

MR. MACDONALD: Go ahead, Fred.

MR. HUGHES: All right. First just to clarify, I said in answer to one of the questions that the technology white paper was in the admin record. I've been told by one of my staff that it's in the final stages to be approved to go in the admin record. So I will make sure tomorrow when I get back to work that it's getting through that process and will be submitted into the admin record.

One question I got during the break was if I correctly heard Mr. Nitschke state that there were essentially no risks regarding Pit 9, then why proceed with the proposed alternatives instead of alternative one, no action?

Because the risk at Pit 9 is relatively low, that actually makes Pit 9 an ideal location to conduct the cleanup. It allows us to have some time to do the phases of the project where we demonstrate the processes before we go out to the pit. Because the risk is low, it's not like we're going out there and tackling the worst pit at the site.

MR. NITSCHKE: I would like to clarify.

MR. HUGHES: Sure.

MR. NITSCHKE: I didn't -- what I said is the residual risk assessment -- the ten nanocuries per gram return to the pit criteria indicated essentially a zero risk for the industrial scenario, because to have a risk it's not just contamination. You have to have an exposure route itself. It has to be available through ingestion, inhalation, dermal, external exposure. So if you have that break in pathway, there's no risk.

So it wasn't meant to say that Pit 9 itself posed no risk, and I'm sorry if someone took it that way.

MR. WADE: I've got one here: Can a record of decision be defined without NEPA documentation? NEPA being National Environmental Policy Act. The next part is: If not, will it be available in the administrative record? The answer to the question can a record of decision be signed without approved NEPA documentation, the answer is no. Prior to a major activity being conducted by the federal government NEPA documentation must be in place.

As to the if not, will it be available in the administrative record part of the question, currently the NEPA and CERCLA processes are separate process in that what goes in the administrative record is what the agencies use in the decision making process to determine what the final remedy will be to conduct the Pit 9 cleanup.

So as such the NEPA document will not be in the administrative record. However, it's now Department of Energy's policy to integrate NEPA and CERCLA. We want to try to use one document to meet the CERCLA needs of performing the interim action by meeting the NEPA requirements also.

Currently the proposed plan that is in the administrative record is also serving as the environmental assessment for this project. That document is undergoing a review in Washington, D.C., right now. It's not been finalized, but as it stands right now they're one and the same document.

MR. HUGHES: For clarification why are actual Pit 9 soils and waste not being utilized, especially in phase two?

They're not being utilized in the proof of process test because we want to demonstrate the processes using substitute materials, and we want to do it in a safe manner. And using surrogates we can still get the same data we need without using the actual material.

In the limited production test during the first phase they will use similar substitute materials to make sure that their integrated process works at a full scale. Once they've demonstrated that they will get the go-ahead to uncover a restricted portion of the pit and process a limited amount of the waste using their process. That will be the last step of the phase two. So during the latter part of that second phase is when the actual Pit 9 waste in a limited quantity will actually be processed.

MR. WADE: I've got a question here, and I want to use one of the previous slides. The question is: Will a liner be installed prior to backfilling?

I'm going to pull out my little cross-sectional view to indicate what we're going to do. The answer is, no, we're not going to put an engineered liner in there. However, when we backfill the pit, we're going to place a two foot layer of underburden or soil in this area prior to depositing the waste. The residual risk assessment on -- I'm sorry, excuse me.

We did some groundwater screen modeling efforts that determined if we've got a ten nanocurie contamination level within the pit, by placing a two foot soil layer of a known soil -- and known soil being we know what the constituents of the soil are and what the absorption rate of that soil are, we can determine how fast or what kind of migration through that soil will occur from the waste.

What we determined is that a two foot layer of soil between the bottom of the pit and Snake River Aquifer -- we've taken no credit for this basalt layer or the hundred and seventy-six meters associated with the layers between the bottom of the pit and the aquifer.

This two foot layer of soil with a ten nanocurie per gram limit within the pit is protective and will not exceed the maximum contaminant level for drinking water in the aquifer.

So we're not going to put a liner on the bottom. We're not going to put a liner on the top. We're just going to backfill -- as Bob Nitschke noted, we're going to backfill this approximately six or seven feet of soil on the top. But we're not putting a liner per se in, but we'll have that soil on the top and bottom.

MR. HUGHES: If I could have Bob help me on this one. The question is: When will the plutonium reach the aquifer, and when will the carbon tetrachloride reach the aquifer?

MR. NITSCHKE: I guess the -- if you're talking post-remediation, which is the easiest to answer, the carbon tet will be gone and so will never get there. But calculations have shown through a model that they're still trying to calibrate out there that the transport time for organic compounds run on the order of about a hundred years for peak aquifer concentrations.

With respect to the plutonium, again it's going to be dependent upon the physical and chemical form of the material that's returned to the pit. With a plutonium oxide with characteristic basalt retardation factors which determine how fast or slow material will move from the Hanford site, travel times for plutonium can be on the order of a hundred thousand years. But again those things will have to be refined based on a specific chemical and physical form of the plutonium.

MR. HUGHES: Is sampling at high spatial resolutions for initiation of phase three part of the preferred alternative? If so, when would such sampling be performed by the selected contractor or other performing entities?

I'm going to answer part of it, and then I'm going to ask John to respond to how the contractors have proposed to do this aspect.

We are continuously sampling or surveying the pit. We just completed in the last month an electromagnetic survey of the pit to determine where the reactor vessel was, where the barrels and the remnants of the barrels where, and where the other magnetic components that are buried in the pit were. And we're looking at other surveys that we can do on the pit to provide us data on where the location of hazardous material is and whether it's starting to spread from the pit or whether it's still confined within the pit.

And as we get that data we provide that to both teams so that they can use that to build a foundation on what their plans are and how they're going to approach sampling the pit before we start to uncover the waste. John.

DR. KOLTZ: Read the question again.

MR. HUGHES: What it is is: Is sampling at high spatial resolution before initiation of phase three part of the preferred alternative? If so, when would such sampling be performed by the contractor or other entity?

DR. KOLTZ: Well, I think the answer is yes. We've got high spatial data resolution in hand right now. During the actual remediation of the pit as they start digging into the pit they literally do it inches at a time. And they will be monitoring for rad content to make sure that we don't run into criticality problems during the processing.

As soon as it's removed, it will be packaged in various containers. They will sample for the organics and hazardous materials before it goes through the process. The high resolution sampling has basically been done.

MR. MACDONALD: There was a question about the underburden layer. It says: Will the underburden be compacted to ten to the minus seven centimeters per -- I'm not sure what that is -- second permeability.

The answer is no. What that underburden layer will provide is a couple of different things. One, it's a working surface for equipment and materials in that pit. And, two, the soil in and of itself has certain absorptive capabilities, and any material that might -- any of the residual material that's in there that might become leachable -- what the modeling showed is that the soils would absorb enough of that material, residual material, without permeability -- we are not doing a liner. All it is is to provide a working surface and provide a unit of material that helps provide additional -- one last additional kind of layer that anything -- any of the residual material would have to go through.

The modeling we did, as Jim said, again shows that with ten nanocuries per gram and that residual material in the waste layer in the pit that -- and a two foot layer of soil, there would be no exceedance of a groundwater -- drinking water -- excuse me, a drinking water standard in the Snake River Aquifer, which is the standard that would -- the health standard that would apply in this case. I don't know if -- do you want to add any more, Dean or Dave, to that?

MR. NYGARD: No. That's fine.

MR. MACDONALD: So it will not be compacted.

Got two more here: Will the comment period be extended since the white paper is not currently available?

The comment period for right now is thirty days. If people wish to request extensions of that comment period, then we certainly entertain those extension requests. There is no plan to extend the comment period at this point.

And the last question: Will questions from the Q and A portion of the meeting be addressed in the responsiveness summary?

The answer is no. The responsiveness summary will address formal comments that we receive. The intent of this Q and A has been to provide people information. We're going in go into this formal comment period, verbal comment period now. So anybody who when we go into that who wishes to make a formal comment, that comment will be addressed in the responsiveness summary. Anybody who wants to make written comments through the close of the comment period, those comments will be addressed in the responsiveness summary.

A copy of the transcript of this meeting tonight will be put into the information repository so that the questions and the responses to those as we've responded to them tonight -- that information will be in the information repositories and available for anybody to peruse at their own convenience.

And with that -- that's the last of the questions unless anybody has any verbal questions at this point.

What we'll do then is go to the formal comment period section of the meeting. What we've got -- again the court reporter will record and transcribe the comments that you make. Those comments will be formally addressed in the responsiveness summary, which will be attached to and a part of the record of decision for this action.

What we want to try to do is again have you come up to the microphone so that the reporter can hear. Please state your name for the record and then go ahead and issue whatever comments you might have. We would not intend to respond to those comments here tonight other than if there is an issue that needs clarification in our mind so that we make sure we understand the comment in its entirety.

So with that -- we had one person signed up. If they want to go ahead and come up, make a comment, feel free to do so now.

MR. BARRACLOUGH: Jack Barraclough, EG&G hydrologist, but I'm here speaking on my own tonight as a representative-elect and a long-time INEL employee.

To go back a little bit, in 1951 and '52 I was part of a geological survey team that looked at the burial ground, as we called it then, and decided that it would be suitable -- the sediments would be suitable for materials generated on INEL in the fission product material that had a thirty year or less half-life.

Then in 1954 when transuranics came from outside the area, that really made the burial ground a new ball game. Later on as this continued in the middle '60s and late '60s I looked at the Radioactive Waste Management Complex and said that these are not compatible for disposal at that time of transuranic wastes. These sediments are not compatible with disposal of transuranic waste, because, one, most of the sediments were formed by floods of the Big Lost River, prehistoric floods. And in geology if something has happened once it isn't a question of will it happen; it's a question of when will it happen.

Second, the sediments were permeable, and there was opportunity for rain and snow melt to leach down and transport the material.

So that was a momentous decision for AEC to take at that time, because then they changed from disposal to storage just one year later in 1970. So the geology and hydrology was the driving force for that change from disposal to storage above ground. As it turned out, that's a very provident thing because we saved millions of dollars by making that change. We did this in a nonregulatory, but just advisory role.

So then a few years later we published this report, USGS Open File Report 76471, in which we concluded that trace quantities of migration had occurred down to the hundred and ten foot bed and possibly the two forty in very low concentrations.

And this was a very unpopular decision. I think I've spent fifteen years convincing people that migration has occurred. Then I've spent the last the six, seven, or eight years convincing people that the levels were very, very low and really pose a very small risk to the aquifer.

In looking at this type of a process, what we have is a situation where from 1954 until 1970 wastes containing transuranics were buried as disposal. So sooner or later we've got to address the problem of what to do with those wastes. And in waste disposal you can always say, well, we need another five years to study or another ten years to study, and you never solve the problem. Or you can say we've got to start tomorrow when you're ill-planned.

It seemed like this process is a good compromise between waiting and studying, and it seemed like the competitive parts of it and the fact that in all waste disposal as soon as you remove the source then you've really lessened the risk by considerably. So phase four would address that and reduce the risk.

Now, when one talks about migration, we've had some examples of levels of plutonium and americium, cobalt 60 and a few other things like that at the hundred and ten foot bed. It's just like looking for a needle in a haystack, Because you drill a number of wells. If the right set of circumstances aren't there where you have material that was buried, was able to have enough rainfall or snow melt to leach it out, find a crevice in the basalt, have it move down that crevice and be deposited on the hundred and ten foot bed -- we do know, however, that carbon tetrachloride or some other organics have moved partly -- possibly some in the liquid phase and some in the vapor phase to the aquifer.

Governor Andrus feels like this is one of the worst -- the mother of all polluters, this -- the organics. But in looking at the data from 1987 to present, there's been one sample of a little over six parts per billion -- the drinking water level of carbon tet is five parts per billion -- that exceeded the drinking water. Most of the levels are below drinking water. So while we can see that the contaminants are there from organics, the levels are very, very low and really pose very little risk to the public.

The one positive sample of questionable accuracy collected in 1987 was from a monitoring well, not from a drinking water well.

The same can be said for plutonium and other -- occasionally you'll get a water sample with a positive or a hit as you call it of radionuclides in the aquifer. Usually repeat sampling will not verify that, that that contaminant is present. So the point is that there is some evidence of migration.

In your report here you say the amounts of radionuclides detected were at the detection limits. That's incorrect. They were above the detection limit or we wouldn't have reported them as positives. But still they're very, very low. And then when radionuclides reach the aquifer after they've gone five hundred eighty feet from the surface down or near surface, there is a great amount of dilution in the aquifer. So the levels are usually not positive or very, very low. There's been evidence that these -- that that will be transported very far south.

So the whole point of this is that this is the type of a project that needs to be done to address the buried transuranic waste, pre-1970 waste, to see how to do it. And I think this will have a lot of transfer value, both to the rest of the RWMC and other areas, and I strongly support the alternative that you selected and going ahead with this project. Thank you.

MR. WADE: Thank you.

MR. MACDONALD: Thank you. Anybody else wish to make any verbal comments at this time? Okay. Again I want to make clear that if people want to make written comments, we encourage that. We accept those through November 21st. If people should decide they would like to make verbal comments after this, we have four additional meetings that will be held. We're going to hold a meeting tomorrow night in Pocatello; next Monday the 9th, evening, in Boise; the following evening November 10th in Moscow; and then the evening of November 12, Thursday, in Twin Falls.

So if you're inclined to make a verbal comment, you still have an opportunity to do that.

I would like to thank everybody for coming out tonight. There is -- on the back of the agendas that you received there is a -- we've made a little form available, an evaluation form for evaluation of this meeting's effectiveness. If you want to take a minute or so to fill that out, that will give us some information on how well or how poorly we're doing in terms of trying to communicate with you in these kind of meetings, whether or not we got the information that you wanted to have.

So fill that out if you're inclined. I would like to thank everybody for taking the time out on a stormy evening. Again as Jim said it was stormy the last time we did that. So thank you all very much.

(Proceedings concluded)

OFFICER'S CERTIFICATE

STATE OF IDAHO)
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County of Bonneville)

I, Rebecca Myers, certified shorthand reporter and notary public, hereby certify that the foregoing transcript consisting of pages numbered from one to 77 inclusive is a true and correct transcript and record of the proceedings held at the public hearing on the revised proposed plan for a cleanup of pit nine at the Radioactive Waste Management Complex, Idaho National Engineering Laboratory held on November 4, 1992.

DATED this 9th day of November, 1992.

(Signed) Rebecca Myers

Rebecca Myers
Certified Shorthand Reporter
Notary Public
Commission Expires: 3/24/93

ORIGINAL

PUBLIC MEETING

REVISED PROPOSED PLAN FOR A CLEANUP OF PIT 9 AT THE RADIOACTIVE WASTE MANAGEMENT COMPLEX, IDAHO NATIONAL ENGINEERING LABORATORY

November 10, 1992

7:00 p.m.

University Inn

Moscow, Idaho

BRIDGES & ASSOCIATES
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DON MACDONALD: I would like to welcome you all here tonight. Thanks for coming out.

What we're here tonight for is to talk about the Proposed Plan for proposed action for cleanup at Pit 9, which is a waste pit at the Idaho National Engineering Laboratory.

The purpose of the meeting tonight is several fold.

One, we want to try to give you some information, we, being DOE, EPA and the State of Idaho, give you some additional information, hopefully go into some detail about what the alternatives considered and particularly the preferred alternative that you find in the Proposed Plan, and help you with a bit of background so you understand what the project is about and why we're doing it. And by the way, my name is Don Macdonald. I don't think I said that, and I apologize. I am the Buried Waste Program Manager for DOE Idaho, and have responsibility for the cleanup actions at the Radioactive Waste Management Complex.

So back to the topic I started on. To give you some additional information about the

Proposed Plan, to allow you all to ask questions, or get clarification about pieces or parts of that plan that you don't understand, and finally to provide formal comment, if you so desire, on the Proposed Plan this evening.

The first thing I want to do is make sure the people understand, we have a court reporter here tonight. The court reporter will transcribe the entire meeting, the presentation, questions and answers, and also take the formal comment, verbal comment.

So there will be a complete record of this meeting. That record will be provided and placed in the information repositories throughout the State.

For those people who have comments who do not feel comfortable or don't wish to stand up and make a verbal comment tonight, you can make written comments and we will accept written comments through the 21st of November. The comment period for this Proposed Plan started October 22nd, the 30 day comment period is in effect. So we'll take comments through the 21st of November, written comments.

And if you want, anybody who might wish

to do so, you can pick up one of these yellow forms in the back, if you would like, and write your comments out tonight and leave it, if you want. If you want to take it with you, it's preaddressed, it's got a bulk mail stamp on it, you can take it home, write a comment out, fold it over, staple it, stick it in the mail.

For those who might not want to do either of Option A or B, we also have a tape recorder here tonight. If you want to leave -- or give us a verbal comment but don't want to stand up in front of the group and do it, we'll make arrangements for you to talk to a tape machine.

I would also like to point out one other thing. There is a green sheet that was back on the tables back here, which is, we've labeled it an errata sheet.

There are two clarifications we are trying to make to statements that were in that Proposed Plan: one, having to do with soils and the in-situ vitrification process; the other having to do with specifically what was going to happen with heavy metal contaminants in one of the processes that we are examining for the preferred alternative.

So that's the purpose of the meeting. The format will be, we'll go through, give a presentation. We'll then have questions and answers. We'll take a brief break after that, if we've been at the Q and A for a while, we'll come back and take formal comment.

The formal comments will be addressed in the Responsiveness Summary, which will be a part of the Record of Decision.

So we will address any formal comments that you give us, verbal or written, in a Responsiveness Summary, which is attached to the Record of Decision.

There are several other people here tonight who are going to be involved besides myself.

There is Jim Wade, who is the Pit 9 Project Manager for DOE-ID, and works in the Buried Waste Program.

There is Mr. Fred Hughes here, who is the Pit 9 Project Manager for EG&G Idaho. EG&G is the management and operations contractor for the Department of Energy for the Idaho National Engineering Laboratory.

We have some other people present tonight who I would like to introduction.

First of all, Mr. Dean Nygard. Dean is with the Idaho Department of Health and Welfare and is responsible for oversight of cleanup activities for the State.

Dean, if you would want to say anything.

DEAN NYGARD: I think that's fine, Don. We're in our third meeting now. So he has stolen everything I have to say; my name, who I am with, and the fact that I'm the Project Manager for this agreement. So I'll be here all evening. If you have any questions about the State's role, please let me know.

DON MACDONALD: Also with us is Mary Jane Nearman from the Environmental Protection Agency, Region 10, out of Seattle. And Mary Jane is the EPA project person overseeing cleanup activities at the Radioactive Waste Management Complex.

MARY JANE NEARMAN: Ditto. If there are any questions that you would like to direct to EPA, please feel free, either at the break or during the question and answer period. We hope we can help you out.

DON MACDONALD: Somebody's going to be happy that I remembered this tonight.

If you all have picked up an agenda back there, on the back of the agenda is a questionnaire for you all to provide any sort of input you might have into the meeting tonight, its effectiveness, how well information was presented, questions answered, that sort of thing. So I would encourage you to fill that out if you are so inclined.

Let me get started and try to give you a brief introduction about what we're talking about with the Pit 9 project and then ask some others to talk to you in some more detail.

The Idaho National Engineering Laboratory, or INEL, is located here in southeastern Idaho. It's an 890 square mile facility that's owned by the Department of Energy, the U.S. Government, and operated for DOE by several management operating contractors.

This plan here shows the boundaries of the INEL.

As you can see, there are several, there are a number of facilities spread across the site. The one that's of interest to us tonight is the Radioactive Waste Management Complex, which is located down here in the southwestern part of the INEL. This is an aerial view of the Radioactive Waste Management Complex, or RWMC.

The RWMC was established in 1952 for the disposal of low-level radioactive wastes generated from operations at the site.

Starting in 1954 INEL began accepting waste from the Rocky Flats plant in Colorado. Rocky Flats was a manufacturing plant which manufactured components for nuclear weapons. That waste was shipped to Idaho and buried in the ground, in a series of pits and trenches that were dug out here from 1954 to 1970.

In 1970 to 1988 waste that was shipped from Rocky Flats was stored, and is currently stored either under this earthen berm or in these balloon buildings down here for eventual disposal at some, as yet to be hoped, disposal site.

The area we are concerned about and the area we talk about in the cleanup program at the INEL at the Radioactive Waste Management Complex is the burial ground where waste was actually buried in the ground back here (indicating). And Pit 9 is an area which you see, I don't know how clearly you see it, but it is this area right in here. And so waste was disposed in Pit 9 in the late '60s. And Jim will talk about that a little more.

I want to make sure that there's one thing that's clear. What we're talking about tonight is this Proposed Plan on how we are going to approach cleanup at Pit 9. We have -- I want to be sure people understand, we're talking about several alternatives. We are going to talk about a preferred alternative and several others. No alternative has yet been selected. That's one of the purposes of this meeting tonight, and to get your comments on all of these alternatives that are presented to you in the Proposed Plan.

With that, I'm going to turn it over to Jim Wade, who is going to go into some more detail on, some more detailed background on Pit 9 and get you introduced to the alternatives.

JIM WADE: Thank you, Don.

Thanks for coming tonight. I appreciate you guys being here.

I'm going to hit a couple of the

burning questions that arose from the Proposed Plan, or from what we're trying to do here tonight.

Those being, first off, what is Pit 9, what are we trying to do with Pit 9, and how are we going to go about trying to do it, and why we're going to go about doing it, with the how that we want to go about doing it. Did I get you confused?

Okay. I'll drop back and go into what is Pit 9. Don talked about Pit 9, indicated that it is located here, it's an inactive waste site that prior to 1970 was used to dispose of transuranic wastes and hazardous wastes from the Rocky Flats plant, as well as some INEL wastes.

Back before 1970 the accepted practice for waste disposal was to either place it uniformly into a pit or just dump it into a pit. They just -- You dig a hole in the ground and just throw the waste in there.

Now, Rocky -- When we say Rocky Flats waste, Don said Rocky Flats was used to make nuclear weapons. Transuranic -- transuranic wastes, which are primarily plutonium and americium; long-lived radionuclides which are alpha emitting. They also contained solvents and degreasing agents and oils that contained hazardous chemicals, such as tetrachloroethylene, trichloroethane, some hazardous constituents. That's what is in these drums. And these drums were either placed in this manner or in this manner in the pits and trenches (indicating).

A little bit more about what Pit 9 looks like. Again, as I talked about, they would dig a hole in the ground.

About 20 feet below the topsoil, so to speak, is a layer of basalt, a hard rock layer type, just a hard granite type rock layer. So we dig down to that layer, then put about a three foot soil burden underneath as more of a management layer or -- It wasn't designed to be any kind of liner or container. It was just a layer to use in managing the area. The waste was then placed in the pit, using one of the two methods described.

And then soils were -- as soil was placed over the waste, it filled in the holes in the cracks and void spaces between the drums, and we called those interstitial soils, if you saw that term in the Proposed Plan.

Then Pit 9 is roughly eight feet

thick of waste. On top of that there is a six foot overburden to keep the wastes so that the waste would not come in contact with workers or people out at the Radioactive Waste Management Complex.

CHUCK BROSCIOUS: I have a question. My understanding of those early pits, and Pit 9 being one of them, inasmuch as some of the places, the basalt came up as far as, as close to between seven and eight feet of the surface, and what they did in terms of excavating to establish the pit, they went all the way down to the basalt, and there was a considerable amount of discussion in the literature that there really isn't anything close to three and a half feet underburden.

JIM WADE: I can say that for Pit 9, from what we have seen of the inventory of the records and how they managed the pit, Pit 9 specifically, that we have an indication there is three and a half feet of soil underburden there.

Now, again, and I am about to jump into that here, this chart, but one of the things I want to hit is that we want to go after Pit 9 because, as Don said, 1970 is when we -- when the decision was made that burying transuranic wastes in the ground was not a good practice, and we moved into storage.

We're going after Pit 9 because Pit 9 was operated from 1967 to 1969. It was one of the latest pits that was used prior to 1970. So we feel like the information we've got as far as shipping records and as far as the practices at the time are as accurate as they can be.

So with that in mind, again, I can't talk to the RWMC as a whole. I can talk to what we believe is going on with Pit 9.

CHUCK BROSCIOUS: Well, the reason I bring it up, in the briefing that we had on November 2nd, there was a lot of weight put on the value, filtration value of the underlying soils between, you know, in terms of basically trying to model the dispersion of contaminants out of Pit 9 down into the lower levels.

So I am bringing this up because it would have a significant bearing on how much --

JIM WADE: It does have a significant bearing, and if I can hit that real quick, and then we're going to hit it a little later, and correct me if I am wrong, what we were talking about the other night, and just so people don't think -- we will have technical briefings if requested by members or parties of the public. The League of Women Voters and Chuck Broscious, I am not exactly sure who you are with, so I will try not to jump in, I know it's some name, but they requested a briefing, and we had a conference call with them last Monday evening.

And specifically what -- and, again, correct me if I am wrong, we were talking about the Residual Risk Assessment and what, if we put back in the pit, was safe.

In that case, because we know what is going back in the pit, we will know what that underliner is going to be, we can control that. So in the case of the Residual Risk Assessment, they are all going to be knowns. It's not a matter of what's there based on a shipping record or anything else.

We can control what goes back in the pit, we can make sure that there is the underburden there that is necessary or what we deem necessary per this Risk Assessment. We are not basing that on the shipping records. .

CHUCK BROSCIOUS: I am not

suggesting that you are. But is there a commitment to exhume contaminated underburden?

DON MACDONALD: Why don't you let us finish up with this briefing, because I think that might answer some of the questions.

CHUCK BROSCIOUS: Fine.

DON MACDONALD: And it will lay out for everybody so that we are all talking from a base of knowledge here about the basics of what we're trying to do.

JIM WADE: And if I don't hit it somewhere through this, make sure, come back at us.

CHUCK BROSCIOUS: Now, the question has been asked. You can come back to it.

JIM WADE: Okay. Again, -- But I don't know if I am answering your question.

CHUCK BROSCIOUS: You haven't.

JIM WADE: Understood. But that's why I'm saying, if we don't answer your question through the presentation, let us know that we haven't answered it, because I can't -- I don't know if I have answered the question enough to make you happy that we have answered the question. That was the point I was trying to make.

Back to the presentation. Again, based on the fact that Pit 9 was operated from 1969 to 19 -- or '67 to '69, we've got good shipping records and a good idea of how the pit was operated, and from those two things, we've got this overview of where wastes are located within the pit and basically what some of those wastes are.

This indicates that Rocky Flats wastes are, the majority of the sludge is located in the southern portion of the pit, and large objects, such as the reactor vessel parts and other things, are located in the northern end of the pit.

Now, that briefly goes through what Pit 9 is. Now we're going to talk about why do we want to clean up Pit 9.

We want to clean up Pit 9 for several reasons.

Number one, being as we identified earlier, Pit 9 contains these transuranic and hazardous wastes that are posing potential source of risk to human health and the environment.

We want to eliminate Pit 9 as a

potential source of risk from these contaminants.

We also want to do Pit 9, again, Pit 9, based on the shipping records and the inventory we have, the wastes within Pit 9 are similar to the wastes located throughout the other pits and trenches that Don identified.

If we can find -- If the alternative proposed in the Proposed Plan works to clean up Pit 9, that will give us information that can be useful in helping determine the action required for the rest of the subsurface disposal area.

KATRINA BERMAN: I have a question. How many other pits and things are in that rectangular -- where you keep --

JIM WADE: Well, it's an 88 acre site. Of this site, there's approximately 20 sites that are classified as TRU pits and trenches, i.e., sites similar to Pit 9.

KATRINA BERMAN: Twenty of them right in that rectangle?

JIM WADE: They are all right within this area here.

Again, if you can see the boundaries, this is an 88 acre site. Now, in that 88 acre site, there's transuranic waste sites, the 20 TRU pits and trenches. This area here is a low-level waste disposal site that takes INEL generated wastes and disposes of it in this area.

So of the 20 pits and trenches that are similar to Pit 9, I'm not sure, if you assume Pit 9 is approximately an acre, so with 20 pits and trenches, you are looking at roughly probably 20 acres of waste forms similar to Pit 9.

CHUCK BROSCIOUS: I think there's over 20 pits and there's some 50 some odd trenches.

JIM WADE: There's 20 pits and trenches that hold waste forms similar to Pit 9.

Now, there's numerous pits and trenches out there. Again, they deal with low-level waste, or they deal with remote-handled wastes, which there's two types of waste forms, contact-handled and remote-handled, depending on the amount of radiation that's emanating from that.

So there are more pits and trenches than just 20. There's 20 TRU pits and trenches, TRU pits and trenches being similar to what is located within Pit 9.

Okay. We've gone through what is Pit 9

and why we want to clean it up. Now we are going to hit how we want to clean it up.

KATRINA BERMAN: I must have been sleeping and missed the why you want to clean it up.

JIM WADE: The why, we want to eliminate Pit 9 as a source of risk because it contains plutonium, americium, the carbon tetrachloride, the hazardous constituents which are hazardous wastes.

And we also want, because we know the most about what Pit 9 and the Pit 9 wastes are similar to what's in the other pits and trenches, it will give us the tools and the information to proceed with determining the actions required for the rest of the cleanup.

Okay. How do we want to clean up Pit 9. We, as the agencies, started out with Pit 9 and said, here is the problem, how do we go about solving this problem. Then we had to come up with alternatives to evaluate, to determine what was feasible, what we could do. These are the five alternatives that we have identified.

The first one is no action. That alternative is identified for us as part of the interim action process. What that means is that at the present time we would take no action to remediate Pit 9. The decision on how to proceed with Pit 9 would be made in 1998 as part of the TRU pits and trenches Record of Decision, which is identified in the Federal Facility Agreement and Consent Order.

The second alternative evaluated is in-situ vitrification. If you missed it, back here there's a model that has a pretty good representation of what in-situ vitrification looks like.

To summarize it, it's a process, in-situ being it takes place with the waste still in the ground, where four electrodes are placed in the ground and electricity run through them to create heat, the heat, approximately 1600 degrees Celsius, then melts the material into an obsidian type form, which is then, it demobilizes the waste forms within the pit.

Ex-situ vitrification is similar to in-situ, except it is not done inplace. We would have to excavate the material from within Pit 9, then place it into a vitrification unit that would then use a high temperature melting process to melt it inplace.

The preferred alternative is physical separation, chemical extraction and stabilization. Fred Hughes is going to go through more specifically what this entails, so I'm going to skip over that one real quick right now.

The fifth alternative is complete removal, storage and off-site disposal, which simply entails excavating all the waste from within Pit 9, placing it into some type of -- it would go through some type of process to repackage it and then it would be placed into storage, pending availability of an off-site disposal area. Currently there is no off-site disposal facility available.

Now, why did we identify Alternative 4, physical separation/chemical extraction/ stabilization, as the preferred alternative?

When we're talking about radionuclides, or radioactive materials, you can't treat those to remove the hazardous part of them. In other words, once they are radioactive elements, they are always radioactive elements.

By stabilizing those elements, you

reduce the mobility and therefore make them safer to manage. Each one of these three processes is a form of a stabilization.

Now, we determined Alternative 4 to be the best alternative because the physical separation/chemical extraction portions reduce the volume that's going to have to be stabilized.

We're concentrating the hazardous materials and making -- and putting them into -- which is going to create a smaller volume, and the stuff, as we concentrate, the stuff that's no longer contaminated will then be placed back into the pit.

The other part of the -- the physical separation/chemical extraction part that makes it more preferable than 2 or 3 is by doing these things, we control what goes into the stabilization process. Alternatives 2 and 3 take everything from this pile and puts it into this high temperature melter.

And this alternative, and Fred will get into this in a little more detail, but in this alternative, by performing these two, we control what goes into the stabilization phase, and so the efficiency of the stabilization process will be better and will have a better -- it will end up being a much more stable mass at the end of the process.

So that's why we identified Alternative 4, and, again, these are the five alternatives identified.

Fred is now going to go into a little more detail on the processes that may be used to meet this alternative to perform the cleanup.

FRED HUGHES: Thanks, Jim. One of the most common questions and comments we got from the earlier round of public hearings in December/January was how do you expect us to give you any comments on these alternatives, how do you expect us to question what you're doing, when you haven't told us much about the technologies you are looking at.

So what I would like to do for the next few minutes is tell you about how we went about selecting the processes that we feel fit under Alternative 4. I want to tell you how the project is structured and why it is structured that way. And, lastly, I want to give you an overview of the processes that we are considering for Alternative 4.

First of all, what we did last year is we sent out a Request for Proposal. And before we sent that request out, we had a couple of meetings with private industry. And we said, there is Pit 9, there is the wastes in the pit, here is the concentrations in the pit, tell us, we're interested in you coming back to us and telling us what you are -- how you would clean up that pit.

We had approximately 18 teams of companies before the proposal was released that said we're interested in bidding on cleaning up the pit. We released the Request for Proposal. We got three responses back from three teams.

We formed a source evaluation board of experts throughout the company -- throughout EG&G, chemical experts, process experts, production experts, radiological control experts. They sat down and they reviewed the proposals we received. They evaluated them to see if they were technically feasible, if they made sense, if the companies understood the complexity of the project, and if they demonstrated some assurance that they would succeed at the project.

The board came back and said, of the

three competitors, two of them meet the criteria, Waste Management Environmental Services and Lockheed.

They also said that both teams offered the best technology available in the world to try to clean up this type of pit. And they also said that we would like to see the processes demonstrated before we actually go out to the site.

So what we have done, we have structured the project in three phases. What we are interested in by structuring it this way, and also you will see some of the features of the two processes, we are interested in several things. We want to make sure that you, the public, are safe. We're not out there to do something and create a danger to you. We're interested in protecting the workers out at the site and the workers that are on the project. And, lastly, we want to make sure the environment is protected.

The second thing we want to do is make sure that we do this job in a cost-effective manner. And you'll see how we do that when I go through the phases.

And, lastly, we want to use proven

technology. We are not interested in a research and development job. We want to use processes that have been demonstrated, have been proven, and have been shown to work.

So what we have done is put the project into three phases. The first phase is a proof of process test. Both companies we have been negotiating with, they have agreed to use their own corporate funds and demonstrate critical aspects of their process that we think are necessary for them to succeed. They will do that at their own sites. They will not do it at the INEL. And they have to pass a stringent list of criteria that we have put in front of them in order to be judged successful in the performance of this test.

If they pass the Proof of Process test, then one of the companies will be chosen, assuming that the project continues to go on to the next two phases.

The other thing that's going to happen in this Proof of Process test is we are not going to use any actual waste from Pit 9. We're going to use the same formulas that Rocky Flats used to make up their sludge, we're going to repeat that and make up the sludges.

However, we are not going to use radioactive plutonium and americium. We are going to use substitute materials. We want to make sure these tests are done in a safe manner. We are not interested in contaminating their equipment.

Assuming that we have one team that's successful, has demonstrated that their process works, that team will go on to the second phase, which is a limited production test.

At that point they will go out to the site and, if you look at one of the models on the back table, it gives you a concept of what they will do in this phase.

What they will do is erect a containment building over the entire pit. They will install full size equipment. And then they will go through another series of tests, using substitute materials. And they will demonstrate that that full size equipment works before we will allow them to uncover a small portion of the pit and show that they can actually clean up a small portion of the waste that's in the pit.

There will be another set of criteria

that will be developed that they have to pass. They must pass the test to go on to the last phase, which is clean up the pit.

So there are several check points throughout the project that these companies have to go through before we go on to the next phase. And that's intended to make sure we have proven technology and that we are doing it in a safe manner.

CHUCK BROSCIOUS: Is AWC/Lockheed seen as the same contractor that did the Johnston Atoll?

FRED HUGHES: Yes, sir.

CHUCK BROSCIOUS: Is it going to be similar, the same design that they used there?

FRED HUGHES: They used some of their, I'll call it, intermediate processes, are similar that they used at Johnston Atoll, but they added other features to handle the wastes that are in Pit 9.

What I would like to do right now is go through both processes and give you a brief overview of what they proposed. And then if there are any questions at the question and answer period, both myself or my technical advisor, Dr.

Kolts, will try to answer them.

What I would like to do is go through Lockheed's proposal first. What you will see is both teams have three basic phases, or points in their process: physical separation, treatment and stabilization.

In Lockheed's case, what they proposed to do is inside that containment building, they will use robots and remote operated equipment, uncover the waste and start to segregate it into waste streams. And they do that at the dig-face. And what I mean by dig-face, is at the point where they take the dirt away, the overburden that Jim talked about and they get their first hint that there's waste, that is the actual dig-face.

What they do is they separate into waste streams large items, reactor vessels Jim mentioned, non-soil, the sludges, glass and metal, and the contaminated soil.

What they propose to do with the large items, if it's determined that they have to be decontaminated, they will do that inside the pit, within that containment building, and they will clean them to a certain level and leave them in the pit.

Non-soil items, your sludges and your glass, they will send directly to a thermal treatment, plasma arc melter. This is a device that operates at 3000 degrees Fahrenheit and changes any of the feed material into a glass-like material. It's like obsidian.

The last waste form is the contaminated soil. What they do is they propose to send it through a chemical extraction system. There are two things that go on in this first block here.

First of all, they strip away your organics, which are sent to your thermal treatment. The other thing they do is they separate the soil into two sizes.

And, primarily, the reason they do that is the smaller size soil, the less than 10 microns, they can send that through a nitric acid bath which readily takes the transuranic material and strips it away from the soil.

The larger soil, the nitric acid bath is not as effective. So what they do, they separate it into two sizes, the less than 10 microns, they send through that bath, strip away the TRU material, and send the transuranic material to the thermal melter. The larger soil they send directly to the melter.

The other thing that I want to point out is that in both teams' processes, they are continuously testing throughout the process for clean soil and material that meets the return to pit criteria, less than 10 nanocuries and the other criteria for the other hazardous material.

The material that's being fed into the thermal melter is changed into a glass-like material, any gases that are formed are treated through a gas scrubber system, they are monitored, they are tested, they are evaluated to make sure that any gases that are released to the atmosphere meet requirements of the Clean Air Act.

There's a final sort. There's a final test. And then the material that doesn't meet the return to pit criteria is put into temporary storage until a final repository is decided on.

In Waste Management's case, they propose three phases like Lockheed. At the dig-face, they also use robots and remote operated equipment to separate the waste into waste forms;

large items, greater than two inches, and less than two inches. The reason they separate it at this point is that their chemical process cannot handle material that's greater than two inches. So that's the reason for the separation.

What I might add, in Lockheed's case, this is the heart of their process (indicating thermal treatment). In Waste Management's process, case, the chemical process is the heart of their treatment.

What they do with the large items and the greater than two inch material is they reduce the size by shredding, cutting up, decontaminate inside that containment building, ensure that it meets the criteria, and leave it inplace. They also sample throughout for clean material.

The less than two inch material, which is primarily your soils and sludges, they send through their chemical extraction process. The overall goal in this phase is to change the solids to liquids.

So what you have is through this process you have liquids coming into an evaporator which contain your heavy metals, your transuranic material, any of your hazardous chemicals. Those are going to this evaporator, evaporation concentration process. Any solids will be tested to make sure they can be returned to the pit. The evaporator concentrates the hazardous material even further. Any gases that are formed are sent through a gas scrubber system, similar to Lockheed's. It's tested, evaluated and monitored to make sure it meets the requirements before the gas is released to the atmosphere.

Of the concentrate, which contains your heavy metals, your transuranic material and any remaining hazardous chemicals, is sent through a stabilization process, and based on the feed that goes into this evaporator and the concentrate that comes out, depends on whether you do a drying process or add chemicals to bind it in a stable matrix. And then it gets placed into temporary storage until a final disposition is determined.

In summary, we're interested in doing this job safely. We're not interested in doing research and development. We're interested in doing it in a cost-effective manner. We don't want to waste your money. That's why the proof of

process tests, the corporations are financing the POP tests. They must pass all of the tests or they do not get reimbursed. If they fail one, fail one small part, then there is no payment on the government's
part.

And we are interested in using proven technologies. Thank you.

DON MACDONALD: Yes. Yes, sir.

CHUCK BROSCIOUS. This says to me that Alternative 4 and Alternative 5 are basically the same, except in Alternative 4 you are talking about excavating everything and concentrating it, after running it through, you know, all these different processes.

But in either case, you are left with either a lot of stuff that needs to be stored, where there's no storage for it, or we are left with a highly concentrated material that needs to be stored that there is no storage for.

So in either case, we are in pretty much the same boat, wouldn't you think?

FRED HUGHES: Well, what you say is right, basically. Both Alternative 4 and 5 are the same, except for an important part. Five digs up the entire pit, puts it into barrels, puts it into storage. So you're talking about 750,000 cubic feet of material, as an outside number.

In Alternative 4's case, we're doing all of this up-front processing to reduce the amount of material that we have to worry about going into storage. So we're not going to dig up the entire pit's contents, put it into storage, and monitor that large volume.

We're going to reduce the material that we have to monitor. And also ensure that the material that we return to the ground is safe. So that's the big difference.

KEN NAGEY: But there are a lot of steps in between, where there is not only the potential for, now, environmental hazard, but you also have the potential like with the gas scrubbing process, you know, if the vapors are safe to be released according to the Clean Air Act, you can release them, but if not, you are stuck with vapors that have to be stored, you know.

And also the fact that it's, you know, just a smaller volume and what the difference in price would be. I mean, whether, you know, it's worth it to spend all this money to go through this complicated process to wind up with a smaller amount that has to be stored, that can't be stored anyway.

DEAN NYGARD: Hang on. There is a clarification here. I think this gentleman is asking, he is saying, there is no storage.

There is storage at the INEL. There is no off-site disposal location.

So we are talking about storage. There is storage. The big -- available. You can store this material. The difference between 4 and 5 is the volume of the material that you can store.

Are we on the same wavelength?

KEN NAGY: Yes.

FRED HUGHES: And your other concern, your concern about the gases meeting the requirements, we are equally concerned, and so by defining these Proof of Process tests, in Waste Management's case, we're testing this entire middle process.

KEN NAGY: Without the radioactive material.

FRED HUGHES: But there are substitute materials in there that mimic the radioactive material well enough, and also we will be doing laboratory tests with plutonium to get tie points so we can say, the plutonium acted like this in the lab, using the substitute material that acted like this, and this is the relationship between the two.

So we are going to test this entire intermediate system.

They have got to prove that their gas scrubber works. They have got to prove that this integrated process works and meets criteria.

MARY JANE NEARMAN: Another issue, the National Contingency Plan, which is the Superfund law, the least preferred alternatives, or the ones that EPA has generally not wanted to resort to, is picking up some material and just taking it somewhere else.

And so the Superfund law requires that we get reduction in toxicity, mobility and volume through treatment for about 90 percent of the waste.

So that is also another reason that Alternative 4 better meets, better complies with the Superfund law.

FRED HUGHES: And in Lockheed's case, we are requiring them to demonstrate this entire thermal treatment process, including the gas scrubbers, the feeders. Both teams have to demonstrate that this material going into storage meets the waste acceptance criteria, that it is stable, it won't leach, it's monolith.

KATRINA BERMAN: What happens if both of these fail to pass the tests along the way?

I mean, what are the alternatives, how many other companies are out there able to --

Obviously, you have chosen these because they have presented the best case.

DON MACDONALD: Yes.

JACKIE COAN: What if they can't prove it? What then?

DON MACDONALD: When we sent out that request for proposals to private industry, we got back three proposals. One was judged nonresponsive. We have these two left.

If these two processes do not work, there is not another process out there that's ready at this time to treat these materials.

This basically is the state-of-the-art for treating these type of materials. If they do not work, we won't proceed with the interim action at that point.

What it will do for us is it will, one, we have confirmed whether or not these processes will work. It will give us information. The tests, even if they fail, will give us information, and the companies information, about things that need to be focused on perhaps to improve the processes to get them to the point where they will work.

AMY FORD: Okay.

DON MACDONALD: Yes, ma'am.

AMY FORD: Are each of the drums going to be assayed?

DON MACDONALD: John Kolts, we'll have him answer that. He's the one who has reviewed all these processes in some details.

JOHN KOLTS: Assayed where?

AMY FORD: The drums that are in the pit, are they going to be assayed before they are scheduled for treatment?

JOHN KOLTS: They are assayed probably six or seven times before they get through the process.

The first thing that's done is there's a dig-face monitor that's -- it's kind of a gross detection system, and that's to make sure that we don't end up in a criticality situation, that you don't find 20 real hot barrels and concentrate them all down into one and they start getting warm on their own.

As soon as they are taken out of the pit, that material is placed into a tram car, and it is placed in a system that's called passive/ active neutron detection.

And as proposed, that detector should be able to monitor above and below 10 nanocuries per gram. If it's above, it will be processed and start over into the other part of the system.

As soon as it is taken out of that tram car, and starts to go in the processes, it's counted again in small, thin layers. At each step in the processes it's counted again.

The final step, when it goes to TRU storage, it's assayed again, with a full drum counting system.

So it's continuous, all the way through the process.

AMY FORD: Since it's mixed waste, is the drum actually tapped when it goes into the --

JOHN KOLTS: The material when it goes into the tram cars is sampled analytically. You can't just measure for carbon at the time there, so we have to take analytical samples, go back into a laboratory and measure those samples.

So there's this tram system that I talked about actually has a back-up time in it to allow the turnaround time for your analytical data to come back.

AMY FORD: After that size reduction, where is the material, the TRU material taken off from that point? Does that go back into -- Where does the arrow go?

JOHN KOLTS: Well, what you've got here, this is really simplified. The greater than two inch material and the large items that are size reduced for decontamination, for example, a big pickup bed, unless it's highly contaminated, it won't be size reduced, it will just be decontaminated in the pit.

But most of the size reduction will be, there's about two or three thousand barrels that were put in the pit that contained sludge at one time that are contaminated.

So what they're going to do is they are going to run those into a shredder, and they are going to put them in a big washing machine, and it's almost like a little cement truck up on end.

The same solution that is used in this chemical extraction system will be used to decontaminate that material. And once that solution comes out of the decontamination chamber, it goes right back into this system where it is handled and treated for waste minimization.

So there is a lot of arrows in here that you don't see.

AMY FORD: The last question I have, most of the time, it seems to me, the DOE requires paperwork based on the actual process.

Since neither one has been chosen, has that paperwork been started yet?

FRED HUGHES: Do you have any specific --

AMY FORD: Like 5481.1B. It's usually like a three-year process.

JIM WADE: Well, some of the rocesses you are talking about, there are several, 5481.1B for those that don't know, is a safety analysis. There is also the NEPA process, National Environmental Policy Act. All those processes are taking place.

There is a lot of parallel paths working on this project. The first part is the public meeting and getting input as to, is the preferred alternative the right alternative and what's going to go into our final Record of Decision. That's the first step to the project. That's why we're here this evening.

One of the other steps of the project is the test phase that Fred is talking about. Also part of this phase, as part of what we're doing with these, we have developed, we, the Department of Energy and EG&G, a safety analysis report that determines design criteria or safety guidelines.

We know what's in Pit 9, as far as the hazardous materials and radioactive materials. We know what the State and EPA regulations are as far as air emissions and worker contamination, radiation control.

So those things are taken into account and we have developed a safety design guideline.

We are going to take this document and give it to the team. The team that is chosen to proceed will then take that and develop a safety analysis report from that, with the thought process being that by us giving them a boiler plate, so to speak, it will improve the process, or expedite the process.

The other parallel path is the NEPA part of it, the National Environmental Policy Act, again. And we're also working that path. We've got an environmental assessment that's currently in Washington being reviewed by our NEPA experts in Washington.

And for those that don't know how that process works, an environmental assessment leads you in one of two directions: a finding of no significant impact will be issued, or a decision will be made to proceed with an Environmental Impact Statement.

So that process is ongoing, too, based on the information that we know. So all those things are being looked at, but we're trying to do as much as we can to make the process not a three or four year process.

DON MACDONALD: Yes, sir.

WALTER BENTLEY: Now that you are creating another paperwork jungle, is there any plan to just put it all on computer and make it involve less paper?

DON MACDONALD: I am not sure --

WALTER BENTLEY: How many pounds of paper are you going to be buying every month to support this; put it in a warehouse that nobody is going to read because they have no time and no effort?

DON MACDONALD: I'm not sure if I'm --

WALTER BENTLEY: You have established criteria. Is that available in computer form? Are your criteria available? When you produce these reports, this data collection here, is that going to be in paperwork form?

DON MACDONALD: There will be -- Data and information is going to be available in several forms. The safety analysis report and the NEPA documentation, those things will end up being hard copy paper.

WALTER BENTLEY: No plan to automate that?

DON MACDONALD: Basically, no, because people are going to end up needing to see that and reviewing it, so, no.

There will be paper copies distributed.

Data, analytical data, that sort of thing, is usually routinely computerized information. Again, with --

WALTER BENTLEY: Will the public ever see any of the computerized information?

DON MACDONALD: Data reports, things that are prepared, we could make that available. Results from tests or something like that.

WALTER BENTLEY: You mentioned criteria. Are these criteria currently readily available now, for passing the test? Because you can come up with criteria, reasonable removal of a thing, it means nothing, instead of .99 percent or 99.9 percent.

I would like to see your criteria, what is considered clean.

DON MACDONALD: Part of what is considered -- What's considered clean is in that Proposed Plan, in the sense that what we're saying is that transuranic elements at 10 nanocuries per gram are protective of the health and environment.

If you look in there, we are talking about, on hazardous wastes, we're talking about delisting the hazardous wastes. To delist the hazardous waste, you are going to have to show that the wastes no longer poses a hazard. You have either treated them to a defined standard, which are published standards in criteria for treatment, or modeling that's done to show that you've gotten them to a level that's protective of health and the environment.

WALTER BENTLEY: My main concern is a big pile of paperwork that nobody reads and is not available.

DON MACDONALD: Well, the treatment standards, for example, are published. Those are federal regulations that are published.

WALTER BENTLEY: Yeah. Those are standard. But the reports you are going to produce out of there, you're going to be taking samples and doing assays.

Where do all of these reports end up? You are going to be monitoring constantly, in various stages. And they will generate numbers.

What I'm asking, is where do these reports end up at?

DON MACDONALD: The reports will end up with DOE, they will end up with EPA, they will end up with the state of Idaho.

We're going to have to show we are doing this whole process in compliance with all appropriate requirements --

WALTER BENTLEY: Could the public be included in that somewhere?

DEAN NYGARD: They are.

MARY JANE NEARMAN: That information does go into the information repositories in the post-ROD file.

JIM WADE: Correct me if I am wrong, the computer question, there are wheels in motion now to provide computers at the Information Repositories, so rather than having to go read a report like you're talking about, it's an optical disk imaging system that you will just use the computer to call up the report.

So we are taking the steps to go computer automated.

WALTER BENTLEY: But trying to get it on the other end, as you collect the data, it goes into computer form, rather than waiting five years.

DEAN NYGARD: I don't think you are going to be waiting five years.

The reports that we are talking about getting are the design reports for the system. There's enforceable deadlines for when those things have to be submitted. We don't put them on a shelf. We review them. Otherwise, we have no idea what's going on out at the site.

Once they are made available to us, they are part of the public record, and under State law, they are available to your review.

WALTER BENTLEY: Are the labor records and things like that going to be available and so forth.

DON MACDONALD: Are you asking, are worker exposure records and that sort of thing --

WALTER BENTLEY: Well, basically, payroll records, who worked there. In the sense that's a form of exposure record, as well.

DON MACDONALD: Well, exposure records and that sort of thing, those are not generally released because those are covered under the Privacy Act, to protect the individual who worked there who might not want information about his work history released or not.

And payroll records are generally the property of a company.

So I'm not sure that payroll records or something like that would be released.

Now, workers have legal rights to examine their personal records kept by a company concerning exposures and that sort of thing that are occupationally related. So a worker working on this project would have the right to look at his record, his or her exposure records. And I believe the current time frame for the retention on those records is 75 years.

So, again, these companies will be required to comply with any and all requirements concerning cleanup criteria, control of exposures, maintenance of records, employee records. There are a host of requirements.

WALTER BENTLEY: I just want to

make sure the records are available, is the biggest concern I have.

MARY JANE NEARMAN: They are always available under the Freedom of Information Act.

WALTER BENTLEY: That is not always true.

MARY JANE NEARMAN: Not payroll records per se, but the data, those types of things.

WALTER BENTLEY: My other concern was total global cost. You may not ask for an individual, but there was 15 people, they spent one month there, how much was spent in the building or whatever it was? Because I don't know how you can manage without that kind of information. Efficiently, that is.

DON MACDONALD: And, again, we're not going to dictate to these companies. We've gone to private industry because we think that generally they can do that more efficiently and manage the project more efficiently.

WALTER BENTLEY: Well, I am just looking for the basis to justify that, the reason being, is DOE's never been known for efficiency.

DON MACDONALD: That's why we're going this route.

WALTER BENTLEY: And I just want the record, that you don't just pass the buck, or passing the information off, well, we have an efficient company; but there are no records to justify it, what expenditures are each month or every year, you know, in terms of what it costs to clean up Pit 9 for January or December. The totals should be available for that, they should be published.

DON MACDONALD: Okay.

WALTER BENTLEY: That's why I'm really asking. Why should we believe you? Show us something that says it is, somebody's name on it, and if they lie, they go to jail.

In other words, so we don't get this creation of false documents.

DON MACDONALD: Okay.

WALTER BENTLEY: Somebody responsible at the top end to say this is the truth and so forth.

It's just that it goes back to the history from years ago from the agency, you know, and we have this question now, is the credibility gap. All I'm trying to do is prevent a problem.

DON MACDONALD: I understand.

Did I see a hand over here?

JACKIE COAN: What is your, on the companies, what is the extraction efficiency percentage that you are shooting for? Is it a hundred percent?

DON MACDONALD: Dr. John?

JOHN KOLTS: On what?

JACKIE COAN: On the removal and the cleanup. Are we looking at 90 percent efficiency, you know, to clean everything up, or are we going to leave 10 percent of it in there? Are we looking at a hundred percent, you know, and we won't accept anything less?

JOHN KOLTS: The criteria that they are going to be judged on to get paid for the POP test is that they have to extract the radioactive components to less than 10 nanocuries per gram.

JACKIE COAN: So in percentages, is that 90 percent?

JOHN KOLTS: Well, it depends on what it started out. If it started out as a thousand nanocuries per gram, they have to go to

10 nanocuries per gram. If they started out at 11 nanocuries per gram, they still have to go to 10 nanocuries per gram.

It is not a percentage. It is an absolute. They have -- If it's above 10 nanocuries per gram before they treat it, when it comes out, it has to be below 10 nanocuries per gram.

JACKIE COAN: I guess what I am concerned about, there is going to be a lot of stuff in there at 10, and 10-plus, 10-plus, 10-plus 10.

DON MACDONALD: No, no, no, no. It doesn't make any difference what it is in here. It is what it is when it comes out here (indicating).

JACKIE COAN: That you are going to put back in that pit.

JOHN KOLTS: It will be less than 10 nanocuries per gram.

JACKIE COAN: Overall, total?

JOHN KOLTS: No. No, no.

JACKIE COAN: So is it going to be a cumulative effect?

JOHN KOLTS: No. You are

misunderstanding. Let's go back to the pit itself. The pit is 550,000 cubic feet of material.

JACKIE COAN: Okay.

JOHN KOLTS: Approximately 150,000 cubic feet is waste that's been put in there. About 300,000 to 350,000 cubic feet is interstitial soil that was clean when it was put in.

If you remember the map, most of the sludgy waste from Rocky Flats, which is the plutonium and americium, is down in this region (indicating).

When we are digging up here, most of the soil that comes out there is just going to be clean soil. It will be dug up, it will be monitored and will be checked and it will be assayed, and if it's clean, it will go right back in the pit. It won't be processed.

So a large portion of the material is going to go back in, probably at zero, but the portion of material that goes into the process to be classified as clean material, it has to be below 10 nanocuries per gram.

That doesn't mean they can add in clean

material to dilute it, to make it be 10 nanocuries per gram.

It means they have to process it to less than 10 nanocuries per gram.

Do I --

JACKIE COAN: I am being rather obtuse here. If you have got this group at 10 and this group at 10, when you put them together, do you still just have 10 or do you now have 20?

JOHN KOLTS: No. You still have 10. It is 10 nanocuries per gram. It is per weight.

It's like having a pound of cookies and a pound of cookies. When you put them together, you have got two pounds of cookies.

JACKIE COAN: Okay. All right. Gotcha.

UNIDENTIFIED SPEAKER: I'm hungry.

DON MACDONALD: Yes, sir.

ANDY FORD: I have several inter-connected questions.

One was why the no action alternative wasn't evaluated.

Another was the volume reduction of

this procedure to create a smaller volume of waste that goes into this box called TRU storage, I am curious what the volume reduction was.

And then about this competition, it sounds to me like you are going to invite two teams in at their own expense, come out onto this government property, start performing these POP tests, and one of them is going to emerge a winner, at which point they have a competitive edge to start working on Pit 9, and then the subsequent pits that you want to attempt?

I guess the question is, why would a company come in and do these tests on their own nickel?

DON MACDONALD: Okay.

ANDY FORD: And then my last question is, if one of these companies wins, like Lockheed, is their procedure sufficiently well known in the literature that the experts of other companies, if you accept their procedure, can come in later and copy what they do and start competing against them in subsequent years?

DON MACDONALD: Okay. I will try to take them in order.

One, the no action alternative has been

considered, and what happens with that action or option is we don't do anything at this point. Pit 9 becomes a part of another operable unit or management unit that's out there called transuranic contaminated pits and trenches, which is scheduled in the Federal Facility Agreement to have a Record of Decision to be reached by 1998.

So the decision is merely, the no action option at this point is to postpone identification of an action out here until 1998.

ANDY FORD: Well, why isn't it clear that no action is worse than these other things? Why isn't it safer for us to leave this pit alone than to go in there and have these companies start messing around?

DON MACDONALD: We've got sampling wells at Pit 9 on the perimeter. There are volatile organic compounds that are being released from Pit 9. Those barrels that were buried are not all intact. So barrels have been breached, you've got waste that's moving out of those barrels.

So we do have, there are elevated readings, soil gas readings, or measurements of volatile organic compounds in the soils around the boundary of Pit 9. And other pits at the RWMC.

What we want to do is control Pit 9 as a source area and remove that waste so it is no longer leaking out of those barrels. That's why we want to take this action.

From a safety perspective, again, as has been stated, this is a pit that we know more about than virtually all the rest of the pits and trenches, in terms of what's in it. It is representative of what we understand to be in the rest of the pits and trenches. We think we have the best records and the most current information on this.

So it's a logical starting point, in that sense, if we're going to have to retrieve waste to control it, this is the logical one to start on. That's why we want -- that's why we did not opt for the no action alternative at this time. It's a first step to dealing with other pits and trenches out there. And it is one that poses a potential risk, and we know we have volatile organic compounds leaving the pit

The second part of the question or the second question was the volume reduction.

ANDY FORD: Yes.

DON MACDONALD: The National Contingency Plans and CERCLA guidelines, we need to meet a 90 percent volume reduction, at a minimum. So that's the goal up-front. And what we feel we can get from these processes is a 90 percent reduction of the volume of the waste, the waste area within the pit.

What was the third part?

MARY JANE NEARMAN: Did that answer your second question?

ANDY FORD: Well, it did, but I don't know why the cost didn't shrink by 90 percent when you compared the gentleman here in the back said, one alternative, you don't lower the volume at all, and in this one you lower the volume by 90 percent, and the costs for the long-term eventual storage didn't drop by such a large fraction.

You answered my question, and then you just made me be puzzled about a different question. I am looking at your costs in Table 2, the long-term storage and off-site disposal. I would have thought those costs, comparing the two alternatives, those costs would have dropped by a factor of 90 percent if you would have compressed -- achieved a 90 percent reduction in the volume of wastes.

DON MACDONALD: Not all of those costs -- It's not a one-to-one relationship in terms of a cost of construction of a storage module, and that assumes some different configurations.

ANDY FORD: Okay.

DON MACDONALD: There are storage modules going to be constructed out there now, because they are moving the stored waste out of those air support structures into modules that are in full compliance with the RCRA, Resource Conservation and Recovery Act. And we could do some more --

I could go back. Jim, we could go back and look at the cost estimates on those things. But off the top of my head, I am not sure.

JIM WADE: Well, let me -- this 90 percent thing has got me, I guess, I want to hit that.

When we are talking 90 percent volume reduction, we are saying that Pit 9 has 150,000 cubic feet of waste. We are going to reduce the amount of that waste that's contaminated with the transuranic materials by 90 percent. That's our goal.

So what goes into storage isn't -- doesn't correlate to the 90 percent because we're taking the concentrated material from the waste in the pit and that's going to go into storage.

And the Proposed Plan assumes that we're going to take, if you're looking at Alternative 5 against Alternative 4, Alternative 5 is everything in the pit, Alternative 4 assumes 50 percent less than Alternative 5. Because what we're going to end up getting into concentration is going to be roughly 50 percent less than Alternative 5, for 4.

Now, the amount of waste that goes back into the pit that's contaminated with the transuranic material will have been reduced in volume by 90 percent. That's our goal. We're striving to put the clean material back in the pit such that the volume of that stuff is the 90 percent.

ANDY FORD: Okay.

JIM WADE: But that doesn't

correlate to the 90 percent that has been whacked off for the storage cost.

ANDY FORD: The amount that goes into the TRU storage, how much less is it with the alternative you prefer than in the alternative labeled complete removal?

JIM WADE: The cost there in the Proposed Plan is 50 percent. 50 percent less cost for what goes into storage from 4 than from 5.

ANDY FORD: Okay.

DON MACDONALD: Okay. You had a question about the POP test.

ANDY FORD: And then these questions about companies, you are inviting two companies in to do POP tests on government lands.

DON MACDONALD: POP tests are done at facilities that they own and operate, off the INEL, the Proof of Process tests.

ANDY FORD: Oh.

DON MACDONALD: And so starting with the Limited Production Test, that would be performed at Pit 9 itself.

The incentive is, you're right, there is an incentive, or they think there is an incentive, and that is, if they can prove that a process works, and successfully demonstrate it, that they could be in the business of remediating these types of wastes.

So it's a market incentive for them. And that's what they're wagering, if you will.

It's not a given. We're talking about Pit 9. If we want to go do other pits and trenches, using a process here, we go through the process all over again, development of a proposed plan and a set of alternatives, public comment on those alternatives, etc. So we're not looking at saying, great, we've got something here, we're just going to go marching merrily along.

And, again, we hope we have some successful technology that will work. Perhaps two technologies would be better because you can retain that price competition.

So the last part of that question, I believe, if I understood that right, was would other companies be able to mimic a process.

ANDY FORD: Yes.

DON MACDONALD: And the answer to that, really, is no, in that there are, each of these companies have already invested a large amount of money in development processes here.

And there are pieces of these processes that are proprietary, in terms of how the process works, what exactly they use and what ratios and that sort of thing.

So proprietary information is not going to be generally available. And it would not be, I don't think it would be easy for anybody to try to mimic these processes or steal them, if you will.

Do you want to add anything to that, John?

JOHN KOLTS: We will know a lot about their processes, because we have to know that they are not adding something to the system that could create additional hazard.

But on the proprietary parts of their processes, that information will be held as limited data, where it is not critical to judging the success or failure of the POP test.

And that's to protect these processes. Many of these processes are patented and are covered by patents, or are protected by patents.

DON MACDONALD: Did I see you --

Yes, sir.

KEN NAGY: Just to go back to what I was saying before, what I was trying to get at was you're trying to sell us number 4, and I'm not trying to say that I'm necessarily opposed to it, but the difference is that we have pretty large reduction in the waste that has to be stored. You say that with the option 4, that waste can be stored on-site, and with option 5, that waste can't be stored on-site there?

DON MACDONALD: No. We could store, with option 4, and again to clarify option 4, what we're saying is we're going to take waste that's spread throughout a volume this big, and ideally scrub, clean, leach, whatever you want, whatever term you might want to use, the substances that are of concern, the plutonium and the americium, not only destroy other substances that are of concern, carbon tetrachloride, trichloroethane, so that we get the waste concentrated into a smaller volume, which ultimately has to go somewhere for ultimate disposal, because the transuranics are long-lived radionuclides.

KEN NAGY: But you just don't

destroy organic compounds.

JOHN KOLTS: Yes.

DON MACDONALD: Yes, you do. You break them down. You break down the molecular structure of them and you end up with new compounds, is what you end up with, water, sodium chloride.

KEN NAGY: And some very concentrated wastes.

DON MACDONALD: Which is going to be principally the plutonium, americium, heavy metals.

MARY JANE NEARMAN: John, could you please address these, for the organics, in certain of the hazardous compounds, they actually are destroyed.

JOHN KOLTS: Yes. When you do the evaporator concentrator here, the trichloroethane, the carbon tetrachloride, which is primarily your organic hazardous materials, will be evaporated, goes into the catalytic oxidation system. The carbon portion of that species will be converted to carbon dioxide. The chlorine portion of that species will be converted to hydrochloric acid. Okay? That hydrochloric acid then goes into a sodium hydroxide scrubber. It reacts, an acid base reaction, and you end up with sodium chloride, table salt and water. So what started out as carbon tetrachloride ends up as table salt and carbon dioxide.

In this process over here, it's effectively the same thing, except that the oxidation occurs in the melter and the scrubber system up here consist consists of, again, a sodium hydroxide scrubber.

KEN NAGY: But my understanding of that process is that it's a somewhat hazardous process. And, you know, I'm not --

JOHN KOLTS: I guess I don't understand what you mean by hazardous. There are certainly hazardous portions of this. But --

KEN NAGY: Well, maybe, you know, if I think I am clarifying what this man over here was trying to get at, option 4 is very complicated.

You know, most people in the public aren't going to understand that, was what's going on, and they won't have availability of data and they won't even be able to understand it, if they do.

So what I am trying to voice is a concern that you want to use this option and that you are pushing this option, not that you have bad intentions, but just is it worth it to take the chance and can any mechanism be installed so that the public has better understanding of what's actually happening out there. Because back when the stuff was dumped there, the public didn't know what was going on, you know.

JOHN KOLTS: Nor did I.

KEN NAGY: And now we are getting into a different process. We understand the dumping now, you know, but now we don't understand the new process.

JOHN KOLTS: Let me address the volume reduction from a different perspective than the project management does.

If you've got two piles of waste, you've got a big pile of waste, and you've got to do something with that pile of waste, the situation that we're in is if we're going to take the waste out of the pit, which is a very uncontrolled environment, it's a situation to where the material could migrate, and the goal is to take that waste and put it into a situation where it can't migrate.

So if we dig, under the present conditions, if we dig this half a million cubic feet out of the ground, option 5, and put it into barrels, we have to build a storage pad, a monitored storage system at the INEL to store a half a million cubic feet of material.

That material can only be stored for a limited period of time. Then it has to go somewhere. And none of us know where "there" is.

KEN NAGY: That's the problem with the whole hazardous waste and reductive waste in general.

JOHN KOLTS: I agree a hundred percent. But we are in a situation, if we dig it all up, we have a half a million cubic feet of this material that we don't have anywhere to go. But if we now take this process and we use it and we do it safely and effectively, instead of having a half a million cubic feet, we end up with fifty to a hundred thousand cubic feet. It's a much, much smaller quantity of material that we have to -- when we get this out and we put this on a pad, people have got to check on this waste constantly.

And that's a hazard in itself. So --

KEN NAGY: Well, I guess the issue that I am addressing, you say, if we do it safely. You know, you say it's not R & D, but it is R & D, and you know it. You know, you are developing technology, you know, for good reasons.

We need to deal with this stuff. And we don't want to have gigantic qualities of it.

DON MACDONALD: We are not going to develop any technology. We are going to ask these people to demonstrate if it works or if it does not.

If it does not, end of story, for this action. We are not going to go back to them and say, okay, make it a little better.

JOHN KOLTS: We have exactly the same concerns that you do about if this process will work. This process right here has been used in hazardous waste sites a lot. This process right here is nitric acid extraction that has been used in the mining industry for a hundred years. This process right here, the high temperature thermal treatment, you have got two of those treaters in Pocatello right now spewing stuff into the atmosphere. They are arc melters. This is plasma arc melters. So they have been used in the refining industry and the metallic purification industry. This process (indicating) has been used by British Nuclear Fuels in England. This process right here has been used by Waste Management numerous times across the United States in hazardous waste sites. The catalytic oxidation is used all over the place. Every refinery in the United States has a catalytic oxidation unit.

What we are asking them to do is to take these individual processes that have been used in similar chemistries and hook them together. That's the demonstration part of it. I mean, we know this chemical extraction will work.

But will it work and produce a product that's a good feed stock for the evaporation? Will this evaporation system produce materials at the right flow rate and sizing that their catalytic oxidation is going to work, and do they need to up the size of this or reduce the size of it?

We are integrating systems. And if

they don't do this, if they can't prove to us that it works, if they can't provide certified data, verifiable data back to Mary Jane and Dean, that they can give their blessing to, we're back to doing real life R & D.

MARY JANE NEARMAN: And the short-term effectiveness, as well, is something, not just what comes out of the process in the TRU storage, but also what is coming out, does it comply with the State regulations for air emissions. And if it does not, it's a no good.

DON MACDONALD: Yeah.

MARY JANE NEARMAN: And they have to provide validated verified data. You know, what we call Level 3 data, that has undergone quite a bit of scrutiny that says, yes, this does work.

DON MACDONALD: If it does not work, again, they will have invested a great deal of money in terms of doing this test, and wagered and not -- wagered and lost, in the sense that we're not going to pay them. We're not paying for R & D. We're paying for a demonstration of a system that they claim will work. We want them to show that it works. If it does not, thanks for the demonstration.

Yes, ma'am.

KATRINA BERMAN: I'm unsure about what stabilization means in the final stages of these.

As I understand it, what you're doing is reducing the volume. But there is no stabilization involved, is there? It is in the same unstable form that it was before.

DON MACDONALD: No. Go ahead, John.

KATRINA BERMAN: Whereas, as I understand it, vitrification does stabilize it, in a different sense.

JOHN KOLTS: Yeah. Vitrification effectively encases the radioactive material in a glass-like substance. Over here, and they have used this evaporative concentrator quite a bit, it creates, depending upon the feed coming in, either a dry gravelly material or something that would actually have, I'm not supposed to use cliches, but a peanut butter consistency.

If they do a leach test on it and if the metals and the radioactive materials leach out of it, then they have to go into the stabilization, this part. If it doesn't leach, if it is stable, the materials don't migrate, they might go directly to TRU storage.

But if the materials leach, and when they say chemical binding, they have some proprietary binders, and these tend to typically be sulfur polymers, that they would encase the radioactive and the hazardous materials in these sulfur polymers so they will not leach out.

The special drying techniques, that's mostly in the case of the nitrate salts that are in there. There are a lot of materials that have nitrates in them, and they would run them at just high enough temperature to decompose the nitrates so that those nitrates weren't causing problems.

So, I mean, the stability of this material and the leachability of this material has to be proven to be every bit as good as the glass-like material that comes out of here (indicating).

KATRINA BERMAN: And the heavy metals would be there, too, or what happens to them?

JOHN KOLTS: Heavy metals are also here. Plutonium is just a heavy metal. It just happens to be a radioactive heavy metal. So they have to immobilize all of the metallic materials or hazardous materials. And if they're not immobilized, if they don't pass the leach test, they don't go on, they're not considered.

DON MACDONALD: Yes, ma'am.

CINDY GARDES: This glass material that you are talking about, it will be formed, too, is that in both processes?

DON MACDONALD: Just in this process. You end up with what's, it's an enriched basalt. It's going to be -- It's going to look like a rock. It's going to be poured out, it's going to cool, an ingot.

CINDY GARDES: My next question is, what is being done with radioactive waste now to avoid these problems in the future for our children and grandchildren? What are they doing right now with radioactive waste? Have they used this glass? I know there is a lot of research done on this glass, turning it into glass.

Is that happening now? What are they doing with it now?

DON MACDONALD: There is work going on at at least one location -- two locations that I know of within the DOE complex in terms of taking radioactive waste and glassifying it. One is in New York, one is in South Carolina.

WALTER BENTLEY: They are building a big plant at Hanford.

DON MACDONALD: They have talked about it. I don't know if they started it.

WALTER BENTLEY: They did start ground work but nobody has seen the design yet.

DON MACDONALD: I'm not sure, I'm personally not sure of any in the commercial world right now.

But this technology, again, is used with other applications, where you don't have plutonium contaminated material to pull it together.

But I think the question you're asking is, is the material that comes out of that, I think, the brute of the question is, is the material that comes out of there going to be stable so that this isn't, you don't have the substance decomposing sometime down the future, is that what you are asking?

CINDY GARDES: I understand that that's what it's going to be. I was just interested about the glass. I have heard a lot about it. I was interested whether that was going on.

And I was also wondering, what is the process now for radioactive waste? And I'm wondering --

DON MACDONALD: All right.

CINDY GARDES: -- what they are doing with the waste at the INEL.

DON MACDONALD: What's going on with waste at the INEL.

Low-level radioactive waste, and that's a designation that low-level wastes are radioactive materials that have a half-life of less than 30 years, and a half-life is the amount of time it takes a radioactive substance, half of the radioactive substance to decay.

And, ultimately, any radioactive substance is going to decay to a stable state, which is usually lead. So ultimately any radioactive material decays to lead.

Now, sometimes if you look at natural uranium, the half-life for uranium is four and a half billion years. There are radionuclides out there that have half-lives measured in seconds and minutes.

Low-level radioactive waste, half-lives of less than 30 years, those are still disposed of at the RWMC, in a section that's -- I'll show it to you in the picture. This area right in here, this is the disposal area for low-level radioactive waste. This is an open pit right here.

CINDY GARDES: So it's disposed of in metal containers?

DON MACDONALD: Boxes, principally.

CINDY GARDES: And so what is the difference between that process and the process in the 1960s?

DON MACDONALD: Okay. This waste is not transuranic waste. It doesn't have -- it has levels of plutonium and americium that are less than actually the waste disposed, less than 10 nanocuries per gram. So it has low levels of -- if it has any transuranic waste at all, it's below a certain level. So that's what is currently disposed of in terms of radioactive waste at the INEL.

CINDY GARDES: Even high-level?

DON MACDONALD: No. No.

High-level waste is a whole other classification of waste. High-level waste is waste that results from reprocessing fuel. Most of this low-level waste is what we called contact-handled waste; i.e., it's handled, it can be handled by workers stacking the waste up, that sort of thing.

High-level waste is intensely radioactive, so you need to be shielded from it and that sort of thing. High-level waste currently at the INEL is calcine, the liquid high-level waste is turned into a calcine, or a little small granules about maybe a millimeter or so in diameter and stored. Again, awaiting some permanent disposal.

CINDY GARDES: Stored in --

DON MACDONALD: Large bins.

CINDY GARDES: Large metal --

DON MACDONALD: Very large metal tanks, basically.

CINDY GARDES: And then is there a storage -- I mean, where is the storage area? Is it in the same burial grounds here?

DON MACDONALD: No. Idaho Chemical Processing Plant.

REUEL SMITH: Don, you might suggest, at the break, there are some pictures over here of that facility, and we can kind of walk through that, if you would like to.

DON MACDONALD: It is stored at the Idaho Chemical Processing Plant.

AMY FORD: I understand, of the solid waste, how it will be stored, and it looks like the gas is going to be scrubbed so it can go off. Is there going to be a burden with liquid waste or is there going to be --

DON MACDONALD: Why don't you go ahead, John, and talk about what happens with the process.

JOHN KOLTS: There is no liquid waste. It is a net user of water.

DON MACDONALD: Yes.

CHUCK BROSCIOUS: In terms of two contractors, in proving their technology, Waste Management probably has had more lawsuits against it than any other corporation in the country. It does not have a very good track record in terms of its hazardous materials plants across the country.

And in terms of Lockheed, you might be interested to watch the Frontline special that they did on Johnston Atoll, and it was extremely critical of how that plant was run and horrendous problems that they had with it, in terms of those two contractors.

I think some problems that people have in terms of what goes back in the trench and exactly what the 10 nanocuries, what kind of risk 10 nanocuries and those kinds of volumes poses, where does the 10 nanocuries come from? I mean, what guidance does that originate from? Is that internal DOE code?

DON MACDONALD: No. What we did was we looked at modeling, we did modeling as to what would be the effect of 10 nanocuries per gram, residual material in the pit. Its effect on groundwater, on the Snake River aquifer, Snake River Plain aquifer, and at that level it was shown that it would be protective, or it would meet Safe Drinking Water Act maximum concentration limits.

CHUCK BROSCIOUS: Well, it's entirely possible if, you know, clearly the Resource Conservation Recovery Act is up for reauthorization, and it is entirely possible, I mean, it's almost a given, that radionuclides are going to be included under RCRA.

If that happens within the next year, assuming, you know, it gets reauthorized next year, could conceivably be looking at a situation where putting that 10 nanocuries back in is not going to meet RCRA criteria.

So it seems real prudent in terms of the fact that this treatment technology is still very much developmental, as you have pointed out, and needs to proceed, needs to be the kind of experimentation, so to speak, and try to come up with these kinds of solutions, you know, waste reduction and whatnot.

But I think that under the circumstances, to intern, to put any of those residuals back into Pit 9, is not prudent.

Another thing, is that to put it back into Pit 9 prior to Programmatic Environmental Impact Statement of the entire INEL site, all the environmental restoration, waste management activities down there, I think is a violation of NEPA.

DON MACDONALD: Okay.

CHUCK BROSCIOUS: The thing is, we cannot, as DOE has done in the past, do little focused environmental assessments that does not take into account the whole waste problem at the site, what remedial actions are going to be going on, what the current burden is and what the anticipated burden is, and do a really comprehensive look at it.

DON MACDONALD: Okay. With regards to RCRA, what Congress does or doesn't do, they do or don't do. I would say that there's not that likelihood, that they would cover radionuclides under RCRA.

Two. We're not going to experiment. They are either going to work or they are not. We are not paying for developmental work. Show us. That's what we're asking.

With regards to NEPA, this is an interim action we're taking under CERCLA. It is not a final action.

The final action for Pit 9, the final action for Pit 9 will in fact be decided via the Transuranic Pits and Trenches Record of Decision. So we haven't prejudiced final closure of this pit if we leave the 10 nanocuries per gram inplace.

FRED HUGHES: Let me quickly address your comment regardING, the two companies.

That's one of the reasons the project is structured like this.

They have to demonstrate that they can do the job at several points, not just technically but schedule-wise, cost-wise and performance-wise, before we are going to allow them to go out there and construct the facility and uncover the pit.

CHUCK BROSCOUS: I understand that. I don't have any problem with that. But these two companies do have a history, and it's not a good history.

FRED HUGHES: I agree. I have read the same papers. I've also talked to, at least in Waste Management's case, on some of the cases, and what you read in the papers is not always what happened behind the scenes.

DON MACDONALD: Right here, next, and then we will go back over there.

WALTER BENTLEY: I only had one criteria, and that has to do with making sure that the instruments are calibrated to some reasonable accuracy so we don't get into fudged tests as part of your criteria. You go in and check to see if their instruments actually are within --

DON MACDONALD: While the actual tests are taking place, we will have people at those facilities also.

WALTER BENTLEY: I don't want people. I want somebody with an instrument to see if that instrument is working.

DON MACDONALD: And that is part of what having people there to verify and check --

WALTER BENTLEY: So I am just asking if they carry a piece of calibration equipment.

DON MACDONALD: It will even be better than that. They will take split samples, taken off-site at a laboratory of our choice.

WALTER BENTLEY: That is the concern I have, that we don't get some funny measurements.

JOHN KOLTS: If you have their laboratory and our laboratory and they are totally independent, and the samples are the same --

WALTER BENTLEY: Okay. I just want to make sure there is some double-checking.

JOHN KOLTS: We are. We are. Full split samples all the way through.

DON MACDONALD: Yes, ma'am.

JACKIE COAN: If we have these two companies that have to go through and prove all of their stuff and we're still talking about 90 percent efficiency, and that it's not the final say on this, you know, that there will be a final action, and I think you said in 1998, wouldn't Alternative 5 be a hundred percent, you know, efficient? I mean, we would get it all out of there, we would store it, we would wait, and then these people can prove, now, and double-prove and triple-prove that this stuff works, and then we can go and do this?

But in the meantime, we have leakage in there. We have, you know, things migrating in there. And, I mean, that just really makes me nervous.

Can you tell me, you know, why you seem to have dismissed Alternative 5? Because it seems so logical that we could just get it out right now at a hundred percent efficiency, store it, let these people prove all of this stuff, and double-prove it to everyone's satisfaction, and then go in and take care of it at that particular point, because this is an interim action.

And then, you know, like I said, I'm concerned about the fact that we have leakage and migration going on right now while we're proving all this stuff.

DON MACDONALD: Okay. Alternative 5 was looked at and it doesn't meet all the requirements that CERCLA says we need to meet in terms of reducing the volume and toxicity and volatility. It always consists of -- It will end up being a fairly much more cost -- We haven't looked at what the costs will be, exhumation, store it, and then when you treat it ultimately, but you are ending up adding, certainly adding costs onto that, and is it cost effective at that point.

MARY JANE NEARMAN: The time question, as well. As far as like digging up this material and storing it, there would be a significant time component, as well. You would still have to go through a Proof of Process limited production type of procedure to make sure that they could do it in a contained type of manner.

So it wouldn't be something that would be much more expeditious, per se. You would also have to construct the storage facilities, which is not an insignificant effort. So timing-wise, I'm not sure, again, we have not done, you know, a complete evaluation of that, but it wouldn't be that much more expeditious. They also have to, under this process, as soon as they reach the decision, depending on whatever the decision might be in the -- whatever they decide to do, they have 15 months by statute to get out and start doing the remediation. So they are tied in somewhat on time, because they don't want it to drag out for an extended period.

CHUCK BROSCIOUS: I don't understand how you can make a statement that it doesn't meet CERCLA, because that is exactly the Alternative 5, is what's happening at Hanford, they are exhuming their buried waste and they are putting it in storage until such time as a decision is made on what kind of process technology is going to be applied to that waste.

I mean, if it got through Hanford and Washington state was adamant about getting -- exhuming it, isolating it so it didn't pose continued threat. But they are storing it. So if it passed Hanford, you know, you can't simply make statements like that and expect it to be believed.

DEAN NYGARD: Well, I don't know the situation at Hanford that you are talking about.

But storage of a waste that's been determined from a regulatory perspective to be a hazardous waste and a radioactive waste is called a mixed waste. It is illegal to store a mixed waste. You can't do it. Unless you are able to treat that waste, render it non-hazardous, which is what this Alternative 4 does, what we are proposing here, so you have a radioactive waste.

You store radioactive waste. You can't store mixed waste. That's Resource Conservation and Recovery Act.

So I don't know what they're doing the Hanford. It could be that the waste that they are removing is just, and I couldn't say, I don't mean to downplay the severity of radioactive waste, the problems over there, but it may be just a radioactive waste, it may not have regulated hazardous waste constituents, chemical contaminations.

CHUCK BROSCIOUS: It's the same kind of witches' brew --

DEAN NYGARD: Well --

CHUCK BROSCIOUS: They are putting it in --

MARY JANE NEARMAN: Again, we can't speak directly to what they are doing at Hanford. As far as what Dean is addressing, complying with the regulations, the storage of this mixed waste is not allowed under RCRA, which the State of course has responsibility to be enforcing. Hanford may be a different situation as far as what --

CHUCK BROSCIOUS: Unless you had a permit for it as an interim storage facility.

DON MACDONALD: Land disposal restrictions say if you take a waste like this and you manage it in some fashion or another, you cannot dispose of that material unless it's been properly treated, and you can't store it for any longer than 90 days.

CHUCK BROSCIOUS: There are all kinds of DOE sites that are in violation of that and there hasn't been any action taken on that.

DEAN NYGARD: Well, sure. And, you know --

CHUCK BROSCIOUS: Because they haven't taken any action, the stuff has sat there, and there has been no plan to do anything with it.

DEAN NYGARD: It's a Catch-22 from a regulatory perspective that is being dealt with in Washington. I'm sure the new Congress is probably going to take it up, because it is a Catch-22.

We want them to dig it up. If it is radioactive, it contains chemical contamination, it is hazardous waste under regulations, it is called a mixed waste. If it is a mixed waste, you can't take it out and store it. You can't take it out, find out it's mixed waste and put it back in the ground.

So the minute you get in there and you start exhuming this material, you had better have a plan for how you plan to treat that waste so that it is no longer, from a regulatory perspective, a hazardous waste. And that's what we're dealing with here.

Yes. Our facilities that handle mixed

wastes are out of compliance, you bet, there are many of them, and a lot of it, is because there is not a treatment technology available that is used on a widespread basis to get all these facilities into compliance by treating all of this waste. This is one of the few, if not the only.

There are some other treatment alternatives out there that are being looked at, but they are thermal treatment technologies, the same as is being proposed here, or close to it.

Incinerators, there is --

CHUCK BROSCIOUS: I agree. I mean, I understand. And the reason that that was put in the RCRA was specifically to make sure that temporary storage holding facilities didn't turn into a permanent disposal site. That was the method and madness of putting it in there.

But the thing is, if you all have a plan and you are working on your technology development, you know, had some pilot plants out there, you know, and there was a process, you know, it certainly from my perspective sounds a whole lot better, and clearly if Hanford, like I said, is implementing that kind of an approach, you know, probably they are waiting on the vitrification plant. I don't know exactly what it is.

But the real concern is that 10 nanocuries, you know, I haven't seen any of those risk assessments on what the implications of that 10 nanocuries is. You know, 10 nanocuries is not harmless material.

DON MACDONALD: Those modeling results should be in that administrative record. And they should be in that file.

CHUCK BROSCIOUS: Well, it needs to be -- that needs to go through the entire NEPA process before -- you know, that has not seen the light of day as far as I can see. You know, that needs to go through a full NEPA process, not just an RA. It needs to be reintroduced into the ground. Because, you know, a thorough Risk Assessment, you know, that goes through all the kinds of review processes that NEPA provides, you know, may find that the existing waste that's already migrated into the deeper soils and the aquifer, may find, you know, that particular site has already reached its maximum and maybe gone beyond. And any kind of additional possibility for leaching may turn out to be unacceptable.

DON MACDONALD: Okay. It sounds like we are starting to get into comments. Do we have any other questions that people want to get answered?

JOHN KOLTS: I would like to try to answer your question from a different perspective, and it is just something to consider when you are trying to consider Alternative 4 and Alternative 5. One of the -- and this has nothing to do with regulations, because I don't regulate anything.

But if you look at these things, I mean, look at what's in the pit. You've got a lot of crap in the pit. You've got carbon tetrachloride, which is highly volatile, you have got hydrocarbons which can decompose under radiation. You have got nitrates, which are highly corrosive. Okay?

Now, you just go to alternative 5 and you say, okay, we don't know what to do so we are just going to dig it up and put it into a barrel and you are going to put it on a pad.

And what are you going to do when the barrel, the top of the barrel pops up? What are you going to do when the barrel rusts out because there's a hole in the plastic bag and the nitrates just rusted through the side of the barrel?

I mean, in Alternative 5 you haven't stabilized this material. You have dug it up, you have put it in a container. That doesn't make it safe.

And I'm not trying to justify, I'm not trying to sway you. But you need to consider here that that stabilization is a big point.

Once it's gone through that melter over there, it is stable. And once it's gone through here, it is stable. It is bound. You're not going to have the corrosion problems, you're not going to have the gas formation problems to near as large an extent as you are if you just dig it up and overpack it in another container. You know, so you need to consider that part of it, too, beyond the regulations. Stabilization is important.

KEN NAGY: But there are other options to stabilization. This isn't the only one.

DON MACDONALD: Are there other questions?

CINDY GARDES: I suggest we take a break. I am sure the court reporter's hands are very tired.

DON MACDONALD: If there are other questions, that we can take care of them fairly expeditiously, we come back and take any formal comments that anybody wants to offer.

So I would like to get through the questions. If there are a lot of questions, we will go ahead and take a break now, because we have been at this for an hour and a half.

CINDY GARDES: Two hours.

DON MACDONALD: No. Excuse me. You are right. Two hours. I didn't even set my watch back.

Do people have a lot of questions yet?

AMY FORD: I have one question. Is the TRU waste that's going to be on a pad covered and monitored and ready to go on a truck? Or it's going to be buried?

DON MACDONALD: The waste that comes out the end here, the TRU waste, will be in a module, a specific storage module that will be built, not a pad. It's an actual building that is in full compliance. There are a number of other of these modules that are going to be built out there. We are going to take advantage of every one of those modules and store it in that.

AMY FORD: And is that eventually going to go to WIPP or some other off-site --

DON MACDONALD: Undetermined. Some disposal location will have to be determined for it, for ultimate disposal. And that is as yet undetermined.

Okay. Yes, ma'am.

JACKIE COAN: We haven't even discussed the vitrification, then. Why hasn't that -- Why haven't you all mentioned that? If what we're looking at, the primary goal here is the stabilization, wouldn't we get stabilization with vitrification?

JOHN KOLTS: We certainly would, but try to run 550,000 cubic feet through vitrification. It is a tremendous amount of material.

ANDY FORD: Why? I mean, I don't understand it. I just know it's very stable. I mean, isn't vitrification, that would lead us to a really stable product at the end?

JOHN KOLTS: Yes, it would.

ANDY FORD: But it's too cumbersome?

JOHN KOLTS: I am trying to come up with the right answer that doesn't take me a half an hour to give it to you.

One of the big questions with the thermal treatment, the thermal treatment is very attractive because it gives us a highly stable waste form. The part that's not attractive about it is that when you go up to 3000 degrees Fahrenheit or 15 to 1600 degrees centigrade, you get a lot of volatilization, you get a lot of potential dust formation, you get a lot of micellar small particles that could flow through the system.

So although the waste form may be very good, this gas scrubber working to specifications day in and day out is a big question that we have.

When we're testing this part of it, we're not worried about the stability of the waste form. We're worried about this gas scrubbing system up here, having it work correctly. And these melters are very complicated pieces of equipment that have to be very tightly controlled, and there's a big difference between having a series of four of them up and trying to control four of them, because that's what you would need to analyze, to melt a half a million cubic feet of material in any reasonable amount of time.

So they've compromised and said, yes, it's a good treatment, but we want to minimize the volume of material that goes in the front end of this system.

And that's the whole point, is let's not throw material in there that doesn't need to be melted.

FRED HUGHES: Also to add on very quick in the in-situ part, we have talked at great length to the in-situ engineers that have been involved in some of these tests, and they have technical questions right now that they say they are not ready to go to Pit 9. They are worried that what happens when you put the electrodes in the ground and you shoot this extremely high current through all these barrels that are in a pit.

They are also worried about what happens when you apply the electricity and the energy that's gone through the material forces the organics and the other volatile chemicals away from the melter and drives it out into the surrounding area.

So they have some big technical questions that they are not close to answering, and they need to do further tests, and they are not ready to apply that particular process to Pit 9-like material.

JACKIE COAN: Okay.

DON MACDONALD: Yes, sir.

KEN NAGY: Because this is such a unique way of choosing, you know, the companies to do this, how will they be -- Will they be able to be locked into any final price tag or is there going to be a contract price? I mean, are you going to set a number and they have to do the work?

FRED HUGHES: The way we've negotiated with the two companies right now is for the Proof of Process test, we will reimburse them eight million dollars, if they pass everything. If they fail one part, they don't get anything. If they spend ten million dollars, they get eight million dollars.

For the other parts, depending on which company succeeds, we will negotiate unit prices with them that will be locked in before they start work.

So they will give us unit prices for per cubic yard of dirt they are going to process or per cubic yard of sludge that they are going to process. We will keep track and verify the amount of material that they process through their system, and that's what we will pay. It will be a unit price. They will say, we processed 10,000 cubic yards of dirt. "X" amount of dollars per yard. And that's what we'll pay.

So it will be locked in. It will be fixed price.

KATRINA BERMAN: What about if they both pass?

FRED HUGHES: If they both pass, we have evaluation criteria, we will look at how they performed technically on the test phase, schedule-wise, how they addressed problems that arose during the test phase and how they handled that, we will look at their management plan to make sure that they understood the complexity of the job, and we will look at how well their process goes beyond the minimum requirements.

Instead of cleaning up to 10 nanocuries, for example, do they clean up to five nanocuries. All of those things will be factored in, they will be evaluated, and one team will be judged to be the best.

DON MACDONALD: Let's take a break. We will take 15 minutes, and we will come back and take comments. Thank you.

(Short recess).

DON MACDONALD: Let's go ahead and reconvene.

What we will do at this point is take formal comments from anybody in the audience who wishes to provide any comment. The comment that you provide will be addressed, as I mentioned earlier, in the Responsiveness Summary, and that's a formal part of the Record of Decision that will be issued on this particular action.

Again, for those who might not want to issue some verbal comment tonight, standing up and for the court reporter to take down, there is a tape recorder back here if you want to make a verbal comment, you can do that with a tape recorder also.

And to reiterate again, we will accept written comments. We will take them tonight or you can send them in and we'll accept them up through the 21st of November.

I would like to ask people tonight, if they can keep comments to five minutes, make sure we can get everybody who wants to issue a comment. I will allow equal opportunity.

So, with that, does anybody wish to make any sort of formal public comment at this point?

WALTER BENTLEY: Are these being repeats, what you are looking for, of what was said during the meeting?

DON MACDONALD: It's --

WALTER BENTLEY: In other words, what has been said before, is that recorded and will be addressed?

DON MACDONALD: It's been recorded in terms of the transcript, but that was designed to answer questions and provide you information.

If you have some comment you want to issue, pro, con, neutral or whatever, anything about the alternatives or about this Pit 9 project, I mean, this is your opportunity to do that and have it formally addressed and responded to in that Responsiveness Summary.

WALTER BENTLEY: But, again, to clarify, there will be a transcript of the entire proceeding that's available in the informational repository.

MARY JANE NEARMAN: And that's a part of the Administrative Record.

DON MACDONALD: And that's a part of the Administrative Record.

The comments will be what will be responded to in that Responsiveness Summary in the Record of Decision.

CHUCK BROSCIOUS: Chuck Broscious of the Environmental Defense Institute.

The position that the Environmental Defense Institute has taken is we are really encouraged that there is actions being taken on the buried waste, it's long overdue, but we are glad that things are beginning to move on this.

We are encouraged that technologies are being investigated and moving ahead towards developing those technologies so that they can deal with this very serious problem.

The alternatives that are available in terms of 1 through 5 alternatives, we consider that there needs to be yet another sixth alternative, that the five don't really meet basic criteria, at least as we see it.

We do endorse moving ahead and developing those technologies, but in terms of what the residuals, the treated material that comes out of this waste, most specifically, what's going to be going back into the pit, not so much what's going to be put into transuranic storage, but what is going to go back into the pit, that there should be nothing put back in that pit until a Programmatic Environmental Impact Statement is done on the entire INEL site, on their whole environmental restoration waste management activities at that site, so that the whole picture is looked at.

It's entirely possible, as I mentioned earlier, that through that Environmental Impact Statement process, it may be determined that the contamination levels already in the soils beyond reach already present such a significant threat that any additional material put back in the ground would be unacceptable.

Therefore, until that process goes through, runs through the mill and that determination is made, nothing should go back in that pit.

Once the material -- either one of these treatment technologies, the residuals from that are going to be in a relatively stable form and they can be stored. Like I mentioned before, Hanford is doing that with similar burial situations with similar materials, and they are exhuming the wastes to get it out of the ground so that there is not any more migration of contaminants into the deep soils. And they are putting it into storage until they make a determination of which treatment technology is going to be applied to that waste.

In terms of the information that the Department of Energy and the State and EPA as partners in this process are sending out to the general public, I find that the information is incredibly biased.

For the most part, there is a tenor in the way the information is presented to essentially trivialize the problem. It does not give a clear and accurate picture to what the problem is and the extent of the problem. We have requested over and over again that the State and/or EPA provide their own companion material at hearings or in mailings, and that hasn't happened. It's not a healthy situation.

In terms of the information that we've gotten at briefings, one specific thing comes to mind, in terms of what you told me on the depth of the contaminants, I'm speaking of Dean Nygard with the state of Idaho, only went to 150 feet.

When I went through and did my own research of the literature, it's very clear that contaminants reached to the deeper interbeds, 240 feet, radioactive contaminants in the groundwater at the 600 foot level that are above the drinking water standards. It's very clear that these materials have migrated very far and do definitely pose a significant risk.

The risk evaluations used really non-conservative assumptions in terms of precipitation, maximum possible precipitation rates, these sorts of things. And, you know, in reviewing, the CERCLA literature as compared to the DOE's own internal literature, they don't support each other.

And it's very troubling to see these kinds of discrepancies between what's offered to the public and what the internal literature offered.

My written comments basically are a good deal more detailed than what I am offering, and I will submit them.

FRED HUGHES: Could I ask one clarifying question so we can make sure we address his comment properly.

You mentioned that you thought the five alternatives were not meeting the criteria, that you had a sixth criteria.

Could you briefly tell me what that is?

CHUCK BROSCIOUS: The sixth alternative would basically be a combination of 4 and 5, not exactly all of one or the other. Proceed with a treatment technology that passes your review process, exhume the waste, and see that nothing goes back into Pit 9, none of the residuals, none of the treated waste, until a Programmatic Environmental Impact Statement is concluded, and that approach is basically acknowledged and accepted in the Record of

Decision.

FRED HUGHES: Thanks.

DON MACDONALD: Okay. Anybody else want to make any sort of comment?

Okay. I want to thank you all for coming out tonight. I hope you have gotten some information that's helpful in terms of trying to explain what we're trying to do.

Again, written comments, we will accept those up through the 21st. So thanks again. Appreciate it.

(Adjourned at 9:35 p.m.)

* * *

STATE OF WASHINGTON)
) ss.
County of Walla Walla)

I, WILLIAM J. BRIDGES, do hereby certify that at the time and place heretofore mentioned in the caption of the foregoing matter, I was a Registered Professional Reporter and Notary Public for Washington; that at said time and place I reported in stenotype all testimony adduced and proceedings had in the foregoing matter; that thereafter my notes were reduced to typewriting and that the foregoing transcript consisting of 110 typewritten pages is a true and correct transcript of all such testimony adduced and proceedings had and of the whole thereof.

WITNESS my hand at Walla Walla, Washington, on this 2nd day of December, 1992.

WILLIAM J. BRIDGES
Certified Shorthand Reporter
No. 299-06 Expires: 10-20-93
Notary Public for Washington
My Commission Expires: 11-1-95